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<110> Bhatia, Ajay  
Skeiky, Yasir A.W.  
Probst, Peter  
  
<120> COMPOSITIONS AND METHODS FOR TREATMENT AND  
DIAGNOSIS OF CHLAMYDIAL INFECTION  
  
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<140> US  
<141> 2001-04-23  
  
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<400> 4

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ctgcagagtt	gactgaggaa	gaggttggtc	gactaaacgc	tcttttacag	tcggattacg	240
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atgcttatcg	tgacaaaaga	catagacttt	ctttgcctgt	tcgtggtcag	agaacaaaaa	360
caaattctcg	cacgcgtaag	ggtaaacgta	aaactattgc	aggtaagaag	aaataataat	420
ttttaggaga	gagtgttttg	gttaaaaatc	aagcgcaaaa	aagaggcgta	aaaagaaaac	480
aagtaaaaaa	cattccttcg	ggcgttgtcc	atgttaaggc	tacttttaat	aatacaattg	540
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<210> 5

<211> 86

<212> PRT

<213> Chlamydia trachomatis

<400> 5

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Ala	Asp	Leu	Ala	Ala	Ile	Val	Gly	Ala	Gly	Pro	Met	Pro	Arg	Thr	Glu	
			20				25						30			
Ile	Ile	Lys	Lys	Met	Trp	Asp	Tyr	Ile	Lys	Glu	Asn	Ser	Leu	Gln	Asp	
		35				40						45				
Pro	Thr	Asn	Lys	Arg	Asn	Ile	Asn	Pro	Asp	Asp	Lys	Leu	Ala	Lys	Val	
	50				55						60					
Phe	Gly	Thr	Glu	Lys	Pro	Ile	Asp	Met	Phe	Gln	Met	Thr	Lys	Met	Val	
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Ser	Gln	His	Ile	Ile	Lys											
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<210> 6

<211> 61

<212> PRT

<213> Chlamydia trachomatis

<400> 6

Ile	Val	Gly	Ala	Gly	Pro	Met	Pro	Arg	Thr	Glu	Ile	Ile	Lys	Lys	Met	
1				5					10					15		
Trp	Asp	Tyr	Ile	Lys	Glu	Asn	Ser	Leu	Gln	Asp	Pro	Thr	Asn	Lys	Arg	
			20					25					30			
Asn	Ile	Asn	Pro	Asp	Asp	Lys	Leu	Ala	Lys	Val	Phe	Gly	Thr	Glu	Lys	
		35				40						45				
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<210> 7

<211> 36

<212> PRT

<213> Chlamydia trachomatis

<400> 7

Ala	Ala	Thr	Ser	Cys	Glu	Leu	Ala	Asn	Gln	His	Gly	His	Leu	Gln	Phe	
1				5					10					15		

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<210> 8
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<213> Chlamydia trachomatis

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 1             5             10             15
Pro Phe

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      <400> 8
Leu Arg His His Ala Ser Leu Gln Thr Asn Met Asp Ile Ser Asn Phe
 1              5              10             15
Pro Phe

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<210> 9
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<213> Chlamydia trachomatis
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<400> 9
 Leu Ala Leu Trp Asn
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<210> 10
<211> 11
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<213> Chlamydia trachomatis
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<400> 10
Cys Cys Tyr Arg Val Asn His Asn His Ile Asp
1 5 10

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<210> 11
<211> 36
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<213> Chlamydia trachomatis
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<210> 12
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<212> PRT
<213> Chlamydia trachomatis
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1 5 10 15
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20 25 30

Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
 50 55 60
 Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Ile Ala Gly Lys Lys Lys
 115 120

<210> 13
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 13
 Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys
 1 5 10 15
 Val Phe Gly Thr
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<210> 14
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 14
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 Phe Gln Met Thr
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<210> 15
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 <212> DNA
 <213> Chlamydia trachomatis

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 cgcaaccgtt tctttcttcc caaactaaag caaatatggg a 161

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 <212> DNA
 <213> Chlamydia trachomatis

<400> 16
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 attaaaggtt ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgtcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
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<210> 17
<211> 298
<212> PRT
<213> Chlamydia trachomatis
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<210> 18
<211> 18
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<212> PRT

<213> Chlamydia trachomatis

<400> 18

Arg Ala Ala Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile Thr
 1 5 10 15
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<210> 19

<211> 18

<212> PRT

<213> Chlamydia trachomatis

<400> 19

Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile
 1 5 10 15
 Arg Pro

<210> 20

<211> 216

<212> PRT

<213> Chlamydia trachomatis

<400> 20

Met Arg Gly Ser Gln Gln Ile Phe Val Cys Leu Ile Ser Ala Glu Arg
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 20 25 30
 Ser Glu Leu Ser Val Arg Phe Cys Leu Ser Thr Lys Cys Trp Gln Asn
 35 40 45
 Arg Phe Phe Leu Pro Lys Leu Lys Gln Ile Trp Asp Leu Leu Leu Ala
 50 55 60
 Ile Leu Trp Arg Leu Thr Met Gln Arg Leu Trp Trp Val Leu Asp Ser
 65 70 75 80
 Leu Ser Val Arg Lys Glu Gln Ile Ala Lys Pro Ala Ala Leu Val Leu
 85 90 95
 Arg Glu Lys Ser Arg Tyr Ser Lys Cys Arg Glu Arg Lys Met Leu Ala
 100 105 110
 Arg Arg Lys Ser Leu Glu Arg Lys Pro Arg Arg Ser Arg Ala Ser Ser
 115 120 125
 Met His Ser Ser Leu Cys Ser Arg Ser Phe Trp Asn Ala Leu Pro Thr
 130 135 140
 Phe Ser Asn Trp Cys Arg Cys Leu Leu Gln Trp Val Phe Val Arg Leu
 145 150 155 160
 Trp Leu Leu Asp Val Arg Ser Leu Leu Gln Leu Leu Asp Cys Ala Leu
 165 170 175
 Ser Ala Pro Glu His Lys Gly Phe Phe Lys Phe Leu Lys Lys Lys Ala
 180 185 190
 Val Ser Lys Lys Lys Gln Pro Phe Leu Ser Thr Lys Cys Leu Ala Phe
 195 200 205
 Leu Ile Val Lys Ile Val Phe Leu
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<210> 21

<211> 1256

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<213> Chlamydia trachomatis

<400> 21

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtagtag	aagcctctgt	atcaaataat	gaggatatag	240
gagatcgcg	tcggttaact	atcaatggga	atgtcgaaga	atacgattac	gttctcgtat	300
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tctaaaatcc	aaatggttgc	tgtgccaaaa	agtagtttgc	gtttccggat	agggcgtaaa	960
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agatttagat	agagcttggt	tagcaggtaa	actgggttat	atgttgctgg	gcgtgttagt	1140
tctagaatac	ccaagtgtcc	tccaggttgt	aatactcgat	acacttccct	aagagcctct	1200
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<210> 22

<211> 601

<212> DNA

<213> Chlamydia trachomatis

<400> 22

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtagtag	aagcctctgt	atcaaataat	gaggatatag	240
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atgaacgcgg	agtcattccct	accgatgcca	caatgcgcac	aaacgtacct	aacatttatg	420
ctattggaga	tatcacagga	aaatggcaac	ttgcccatgt	agcttctcat	caaggaatca	480
ttgcagcacg	gaatataggt	ggccataaag	aggaaatcga	ttactctgct	gtcccttctg	540
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<210> 23

<211> 270

<212> DNA

<213> Chlamydia trachomatis

<400> 23

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tttgattctt	tgcgagaatt	atccgcctaag	cttggttacg	atagcgatgg	agagactggg	180
gatttcttca	acgaggagta	cgacgacgaa	gaagaggaaa	tcaaaccgaa	gaaaactacg	240
aaacgtggac	gtaagaagag	ccgttcataa				270

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<211> 363
 <212> DNA
 <213> Chlamydia trachomatis

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 actttctttc agatacgaat aagcatagct gttcccagaa taaaaacggc cgacgctagg 180
 aacaacaaga tttagataga gcttgtgtag caggtaaact gggttatatg ttgctgggag 240
 tgtagtttct agaataccca agtgcctcc aggttgtaat actcgatata cttccctaag 300
 agcctctaag ggataggata agttccgtaa tccataggcc atagaagcta aacgaaacgt 360
 att 363

<210> 25
 <211> 696
 <212> DNA
 <213> Chlamydia trachomatis

<400> 25
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 gcaagctctc aaatccttgc tttgaataat ccagatattt caaaaacccat gttcgataaa 180
 ttcacccgac aaggactccg tttcgactta gaagcctctg tatcaaataat tgaggatata 240
 ggagatcgcg ttcggttaac tatcaatggg aatgctgaag aatacgatta cgttctcgta 300
 tctataggac gccgtttgaa tacagaaaat attggcttgg ataaagctgg tgttatttgt 360
 gatgaacgag gagtcacccc taccgatgcc acaatgcgca caaacgtacc taacatttat 420
 gctattggag atatcacagg aaaatggcaa cttgcccatt tagcttctca tcaaggaatc 480
 attgcagcac ggaatatagg tggccataaa gaggaaatcg attactctgc tgtcccttct 540
 gtgatcttta cttccctga agtcgcttca gtaggcctct ccccaacagc agctcaacaa 600
 catctccttc ttcgcttact tttctgaaa aatttgatac agaagaagaa ttcctcgcac 660
 acttgcgagg aggagggcgt ctggaagacc agttga 696

<210> 26
 <211> 231
 <212> PRT
 <213> Chlamydia trachomatis

<400> 26
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 Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
 20 25 30
 Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile Leu Ala Leu
 35 40 45
 Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe Thr Arg Gln
 50 55 60
 Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile Glu Asp Ile
 65 70 75 80
 Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu Glu Tyr Asp
 85 90 95
 Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu Asn Ile Gly
 100 105 110
 Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val Ile Pro Thr
 115 120 125
 Asp Ala Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp
 130 135 140
 Ile Thr Gly Lys Trp Gln Leu Ala His Val Ala Ser His Gln Gly Ile

<400>	29						
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cctgaggcaa	gagcctctga	attaactgaa	gaagaagtag	gacgactgaa	ctctctgcta		180
caatcagaat	ataccgtaga	aggggatttg	cgacgtcgtg	ttcaatcgga	tatcaaaaga		240
ttgatcgcca	tccattctta	tcgaggtcag	agacatagac	tttctttacc	agtaagagga		300
caacgtcaaa	aaactaattc	tcgtactcga	aaaggtaaaa	gaaaaacagt	cgcaggtaag		360
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<210> 31
<211> 10
<212> PRT
<213> Artificial Sequence
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<400> 31

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<211> 53
<212> PRT
<213> Chlamydia trachomatis
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<400> 32

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<210> 33
<211> 161
<212> DNA
<213> Chlamydia trachomatis
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<400> 33

60

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<210> 34
 <211> 53
 <212> PRT
 <213> Chlamydia trachomatis

<400> 34
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 Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile
 20 25 30
 Leu Phe Val Asn Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr
 35 40 45
 Lys Ala Asn Met Gly
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<210> 35
 <211> 55
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 35
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<210> 36
 <211> 33
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 36
 ctcgaggaat tcttatttta caatatgttt gga 33

<210> 37
 <211> 53
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 37
 gatatacata tgcatacaca tcaccatcac atgccacgca tcattggaat gat 53

<210> 38
 <211> 30
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 38
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<210> 39
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 <212> PRT
 <213> Artificial Sequence

<220>

<213> Chlamydia

<400> 44

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cgccgtgggc  gatttagcga  aaaatgattc  ttctattcaa  gtacgcatca  ctgcttatcg  180
tgctgcagcc  gtgttgagga  tacaagatct  tgtgcctcat  ttacgagttg  tagtccaaaa  240
tacacaatta  gatggaacgg  aaagaagaga  agcttgagga  tctttatgtg  ttcttactcg  300
gcctcatagt  ggtgtattaa  ctggcataga  tcaagcttta  atgacctgtg  agatgttaaa  360
ggaatatcct  gaaaagtgtg  cggaagaaca  gattcgtaca  ttattggctg  cagatcatcc  420
agaagtgcag  gtagctactt  tacagatcat  totgagagga  ggtagagtat  tccggtcac  480
ttctataatg  gaatcggttc  tcgtgccgg  509

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<210> 45

<211> 481

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (23)

<223> n=A,T,C or G

<400> 45

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ttgcaaccgc  acgcgattga  atgatacgca  agccatttcc  atcatggaaa  agaacccttg  180
gacaaaaata  caaaggaggt  tcaactcctaa  ccagaaaaag  ggagagttag  tttccatggg  240
ttttccttat  atacaccctg  ttcacacaa  taggagccgc  gtctagtatt  tggaatacaa  300
attgtcccca  agcgaatttt  gttcctgttt  cagggaatttc  tctaattgt  tctgtcagcc  360
atccgcctat  ggtaacgcaa  ttagctgtag  taggaagatc  aactccaaac  aggtcataga  420
aatcagaaag  ctcataggtg  cctgcagcaa  taacaacatt  cttgtctgag  tgagcgaatt  480
g  481

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<210> 46

<211> 427

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (20)

<223> n=A,T,C or G

<400> 46

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tctaagccct  gacacattct  ttgaacaacc  ttatgcccg  gttcgggata  agccaactct  180
cgcccccgaa  acatacaaga  aacctttact  ttatttcctt  tctcaataaa  ggctctagct  240
tgctttgctt  tcgtaagaaa  gtcgttatca  togatattag  gcttaagctt  aacctctttg  300
atacgcactt  ggtgctgtgc  tttcttacta  tttttttctt  ttttagttat  gtcgtaacga  360
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<210> 47

<211> 600

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (522)

<223> n=A,T,C or G

<400> 47

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gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttggttctag ctttgggtacg agaagggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gngtggtatg ggттаатgcc 540
ctttctaatt gcaatgatat ttttaggaata acaaatcttc таатgtatct tttttggagg 600

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<210> 48

<211> 600

<212> DNA

<213> Chlamydia

<400> 48

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ggagctcgaa ttcggcacga gctctatgaa tatccaattc tctaaactgt tcggataaaa 60
atgatgcagg aattaggtcc acactatctt tttttgtttc gcaaattgatt gatttttaaat 120
cgtttgatgt gtatactatg tcgtgtaagc ctttttggtt acttctgaca ctagccccc 180
atccagaaga taaattggat tgcggtgcta ggtagcgaag taacactttt ttcctaataa 240
attgggcaa gttgcatccc acgttttagag aaagtgttgt tttccagtt cctcccttaa 300
aagagcaaaa aactaagggtg tgcaaatcaa ctccaacggt agagtaagtt atctattcag 360
ccttggaata catgtctttt ctagacaaga taagcataat caaagccttt ttagcttta 420
aactgttatc ctctaatttt tcaagaacag gagagtctgg gaataatcct aaagagtttt 480
ctatttggtg aagcagtcct agaattagtg agacactttt atggtagagt tctaaggagg 540
aatttaagaa agttactttt tccttggtta ctogtatttt taggtctaат tcggggaaat 600

```

<210> 49

<211> 600

<212> DNA

<213> Chlamydia

<400> 49

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gatccgaatt cggcacgaga tgcttctatt acaattgggtt tggatgcgga aaaagcttac 60
cagcttattc tagaaaagtt gggagatcaa attcttgggtg gaattgctga tactattggt 120
gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttggttctag ctttgggtacg agaagggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gtgtggtatg ggттаатgcc 540
ctttctaatt gcaatgatat ttttaggaata acaataactt cтаатgtatc ttttttgagg 600

```

<210> 50

<211> 406

<212> DNA

<213> Chlamydia

<400> 50

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gatccgaatt cggcaccgagt tcttagcttg cttaattacg taattaacca aactaaaggg 60
gctatcaaat agcttattca gtctttcatt agttaaacga tcttttctag ccatgactca 120
tcctatgttc ttcagctata aaaatacttc ttaaaacttg atatgctgta atcaaatcat 180
cattaaccac aacataatca aattcgctag cggcagcaat ttcgacagcg ctatgctcta 240
atctttcttt cttctggaaa tctttctctg aatcccagagc attcaaacgg cgctcaagtt 300
cttcttgaga gggagcttga ataaaaatgt gactgcgcgc atttgcttct tcagagccaa 360
agctccttgt acatcaatca cggctatgca gtctcgtgcc gaattc 406

```

<210> 51

<211> 602

<212> DNA

<213> Chlamydia

<400> 51

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gatccgaatt cggcaccgaga tatttttagac aaaatcacia cagacccttc tctagggttg 60
ttgaaagctt ttaacaactt tccaatcact aataaaattc aatgcaacgg gttattcact 120
cccaggaaca ttgaaacttt attaggagga actgaaatag gaaaattcac agtcacaccc 180
aaaagctctg ggagcatgtt cttagtctca gcagatatta ttgcatcaag aatggaaggg 240
ggcgttggtc tagctttggg acgagaaggt gattctaagc cctacgcgat tagttatgga 300
tactcatcag gcgttcctaa tttatgtagt ctaagaacca gaattattaa tacaggattg 360
actccgacaa cgtattcatt acgtgtaggc ggttttagaaa gcggtgtggt atgggttaat 420
gccctttcta atggcaatga tatttttagga ataacaaata cttctaattgt atcttttttg 480
gaggtaatac ctcaaacaaa cgcttaaaca attttttattg gatttttctt ataggtttta 540
tatttagaga aaaaagttcg aattacgggg tttgttatgc aaaataaact cgtgccgaat 600
tc 602

```

<210> 52

<211> 145

<212> DNA

<213> Chlamydia

<400> 52

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gatccgaatt cggcaccgagc tcgtgccgat gtgttcaaca gcatccatag gatgggcagt 60
caaataact ccaagtaatt ctttttctct tttcaacaac tccttaggag agcgttggat 120
aacattttca gctcgtgccg aattc 145

```

<210> 53

<211> 450

<212> DNA

<213> Chlamydia

<400> 53

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gatccgaatt cggcaccgagg taatcggcac cgcactgctg aactcatct cctcgagctc 60
gatcaaacc acacttgga caagtaccta caacataacg gtcogctaaa aacttccctt 120
cttctcaga atacagctgt tcggtcacct gattctctac cagtcgcggt tcctgcaagt 180
ttcgatagaa atcttgaca atagcaggat gataagcggt cgtagtcttg gaaaagaaat 240
ctacagaaat tcccaatttc ttgaaggtat ctttatgaag cttatgatac atgtcgacat 300
attcttgata ccccatgcct gccaaactct cattaagggt aattgcgatt ccgtattcat 360
cagaaccaca aatatacaaa acctctttgc cttgtagtct ctgaaaacgc gcataaacat 420
ctgcaggcaa ataagcctcg tgccgaattc 450

```

<210> 54

<211> 716

<212> DNA

<213> Chlamydia

<400> 54

```

gatcgaaatt cggcacgagc ggcacgagtt ttctgatagc gatttacaat cctttattca 60
acttttgcct agagaggcac actatactaa gaagtttctt ggggtgtgtg cacagtcctg 120
tcgtcagggg attctgctag aggggtaggg gaaaaaaccc ttattactat gaccatgcgc 180
atgtggaatt acattccata gactttcgca tcattcccaa catttacaca gctctacacc 240
tcttaagaag aggtgacgtg gattgggtgg ggcagccttg gcaccaaggg attccttttg 300
agcttcggac tacctctgct ctctacaccc attaccctgt agatggcaca ttctggctta 360
ttcttaatcc caaagatcct gtaactttcct ctctatctaa tcgtcagcga ttgattgctg 420
ccatccaaaa ggaaaaactg gtgaagcaag ctttaggaac acaatatcga gtagctgaaa 480
gctctccatc tccagaggga atcatagctc atcaagaagc ttctactcct tttcctggga 540
aaattacttt gatatatccc aataatatta cgcgctgtca gcgtttggcc gaggtatcca 600
aaaaatgacg gacaaggagc acgctaaatt tgtacatacc ccaaaatcaa tcagccatct 660
aggcaaatgg aatatcaaag taaacagtat acaactgggg atctcgtgcc gaattc 716

```

<210> 55

<211> 463

<212> DNA

<213> Chlamydia trachomatis

<400> 55

```

tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
cgcgttcggg taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
ggacgcggtt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240
cgcggagtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
ggagatatca caggaaaatg gcaacttgcc catgtagctt ctcataagg aatcattgca 360
gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
tttaccttcc ctgaagtcgc ttcagtaggc ctctccccaa cag 463

```

<210> 56

<211> 829

<212> DNA

<213> Chlamydia trachomatis

<400> 56

```

gtactatggg atcattagtt ggaagacagg ctccggattt ttctggtaaa gccgtttgtt 60
gtggagaaga gaaagaaatc tctctagcag actttcgtgg taagtatgta gtgctcttct 120
tttatcctaa agattttacc tatgtttgtc ctacagaatt acatgctttt caagatagat 180
tggtagattt tgaagagcat ggtgcagtcg tccctgggtg ctccgttgac gacattgaga 240
cacattctcg ttggctcact gtagcgagag atgcaggagg gatagaggga acagaatatc 300
ctctgttagc agaccctct tttaaaatat cagaagcttt tgggtgtttt aatcctgaag 360
gatcgctcgc ttttaagagct actttcctta tcgataaaca tgggggttatt cgtcatgcgg 420
ttatcaatga tcttccttta gggcgttcca ttgacgagga attgcgtatt ttagattcat 480
tgatcttctt tgagaaccac ggaatggttt gtccagctaa ctggcgttct ggagagcgtg 540
gaatgggtgcc ttctgaagag ggattaaaag aatacttcca gacgatggat taagcatctt 600
tgaaagtaag aaagtcgtac agatcttgat ctgaaaagag aagaaggctt ttttaatttc 660
tgcagagagc cagcgaggct tcaataatgt tgaagtctcc gacaccaggc aatgctaagg 720
cgacgatatt agttagttaa gtctgagtat taaggaaatg aaggccaaag aaatagctat 780
caataaagaa gccttcttcc ttgactctaa agaatagtat gtcgtatcc 829

```

<210> 57

<211> 1537

<212> DNA

<213> Chlamydia trachomatis

<400> 57

acatcaagaa atagcggact cgcctttagt gaaaaaagct gaggagcaga ttaatcaagc 60
 acaacaagat attcaaacga tcacacctag tggtttggat attcctatcg ttgggtccgag 120
 tgggtcagct gcttccgcag gaagtgcggc aggagcggtg aaatcctcta acaattcagc 180
 aagaatttcc ttgttgcttg atgatgtaga caatgaaatg gcagcgattg caatgcaagg 240
 ttttcgatct atgatcgaac aatttaattgt aaacaatcct gcaacagcta aagagctaca 300
 agctatggag gctcagctga ctgcatgtc agatcaactg gttggtgcgg atggcgagct 360
 cccagccgaa atacaagcaa tcaaagatgc tcttgcgcaa gctttgaaac aaccatcagc 420
 agatggttta gctacagcta tgggacaagt ggcttttgcg gctgccaaagg ttggaggagg 480
 ctccgcagga acagctggca ctgtccagat gaatgtaaaa cagctttaca agacagcgtt 540
 ttcttcgact tcttccagct cttatgcagc agcactttcc gatggatatt ctgcttaca 600
 aacactgaac tctttatatt ccgaaagcag aagcggcggtg cagtcagcta ttagtcaaac 660
 tgcaaatccc gcgctttcca gaagcgtttc tcgttctggc atagaaagtc aaggacgcag 720
 tgcatatagc cgcttacagg ttctggattc tttgatgtct acgattgtga gcaatccgca 840
 agcaaatcaa gaagagatta tgcagaagct cacggcatct attagcaaag ctccacaatt 900
 tgggtatcct gctgttcaga attctgtgga tagcttgcat aagtttgctg cacaattgga 960
 aagagagttt gttgatgggg aacgtagtct cgcagaatct caagagaatg cgttttagaa 1020
 acagcccgtt ttcatccaac aggtgttggg aaacattgct tctctattct ctggttatct 1080
 ttcttaacgt gtgattgaag tttgtgaatt gagggggagc caaaaaagaa tttctttttt 1140
 ggctcttttt tcttttcaaa ggaatctcgt gtctacagaa gtcttttcaa taataagttc 1200
 ttagttccaa aagaagaaaa tatataaaag aaaaaactcc taattcattt aaaaagtgtc 1260
 cggcagactt cgtggaaaaat gtctgtaaag ctggagggga atcagcagaa agatgcaaga 1320
 tatccgagaa aaaaggctca ggctcgtgcc gaattcggca cgagactacg aaagaaagg 1380
 cttttctttc ggaatctgtc attggatctg cgtaagactt aaagttcggc aacacaggct 1440
 ctgtcttttc ttttaggtttc ttgcgcgaga aaaattttct caagtaacaa gaagattttc 1500
 ttttacagcc ggcattccggc ttctcgcgaa gtataac 1537

<210> 58
 <211> 463
 <212> DNA
 <213> Chlamydia trachomatis

<400> 58
 tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
 cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
 cgcggttcgt taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
 ggacgcggtt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240
 cgcgaggtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
 ggagatatca caggaaaaat gcaacttgcc catgtagctt ctcatcaagg aatcattgca 360
 gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
 tttaccttcc ctgaagtcgc ttcagtaggc ctctcccca cag 463

<210> 59
 <211> 552
 <212> DNA
 <213> Chlamydia trachomatis

<400> 59
 acattcctcc tgctcctcgc ggccatccac aaattgaggt aaccttcgat attgatgcc 60
 acggaatttt acacgtttct gctaaagatg ctgctagtgg acggaacaa aaaatccgta 120
 ttgaagcaag ctctggatta aaagaagatg aaattcaaca aatgatccgc gatgcagagc 180
 ttcataaaga ggaagacaaa caacgaaaag aagcttctga tgtgaaaaat gaagccgatg 240
 gaatgatctt tagagccgaa aaagctgtga aagattacca cgacaaaatt cctgcagaac 300
 ttgttaaaga aattgaagag catattgaga aagtaacgca agcaatcaa gaagatgctt 360
 ccacaacagc tatcaaagca gcttctgatg agttgagtag togtatgcaa aaaatcggag 420
 aagctatgca ggctcaatcc gcatccgcag cagcatcttc tgcagcgaat gctcaaggag 480
 ggccaaacat taactccgaa gatctgaaaa aacatagttt cagcacacga cctccagcag 540

552

<400> 60

```
<210> 61
<211> 1215
<212> DNA
<213> Chlamydia trachomatis
```

<400> 61

attacagcgt	gtgcaggttaa	cgacatcatt	gcatgatgct	tttgatggca	ttgatgcggc	60
attccttata	gggtcagttc	ctagaggccc	aggaatggag	agaagagatc	ttctaagaa	120
aaatggggag	attgttgcta	cgcaaggaaa	agctttgaac	acaacagcca	agcgggatgc	180
aaagattttt	gttgttggga	accctgtgaa	taccaattgc	tggatagcaa	tgaatcatgc	240
tcccagatta	ttgagaaaga	actttcatgc	gatgctacga	ttggaccaga	atcgtatgca	300
tagcatgtta	tgcgataag	cagaagtacc	tttatcggt	gtatcacaa	ttgtggtttg	360
gggaaatcac	tgcgcaaac	aagtgcctga	ttttacgcaa	gctctgatta	atgaccgtcc	420
tatcgcagag	acgatagcgg	atcgtgattg	gttagagaat	attatggtgc	cttctgtaca	480
gagtcgtggt	agtgcagtaa	ttgaagcacg	agggaaagtct	tccggcagctt	ctgcagcacg	540
agctttagca	gaggtgctc	gatcaatata	tcagccaaaa	gaaggactcg	tgccgaattc	600
ggcacgagta	tcgaaatttc	aggcatttct	agtgaatggt	cgtatgctta	taaactacgt	660
ggtacagact	tgagctctca	aaagtttgct	acagattctt	acatgcaga	cccttattct	720
aagataatct	actccctca	actatttgg	tcccctaaac	aagaaaagga	ttaacgcttt	780
agttactga	aatatgagga	ttttgactgg	gaaggcgaca	ctcctttgca	ccttccaaaa	840
gaaaattact	tcattttatga	aatgcatggt	cggtcattca	cccgatcc	gtcttccag	900
gttcccac	ctggaacttt	ccttggtatc	atcgaaaaaa	tagaccacct	caaacaacta	960
ggcgttcac	cagttgaact	ccttcctatt	ttcgaattcg	atgaaaccgt	ccatccattt	1020
aaaaatcagg	acttccccca	cctgtgtaac	tattgggggt	attcttcgg	gaattttttc	1080
tgccctctc	gcgcgttatac	ttatggggca	gacccttgcg	ctccggcccg	agagttcaag	1140
actctgtca	aagcgttaca	cctgcggga	atcgaagtca	ttctcga	cgttttcaat	1200
catacagcct	ttgaa					1215

<210> 62
 <211> 688
 <212> DNA
 <213> Chlamydia trachomatis

<400> 62
 gtggatccaa aaaagaatct aaaaagccat acaaagattg cgttacttct tgcgatgcct 60
 ctaacacttt atcagcgtca tctttgagaa gcatctcaat gagcgctttt tcttctctag 120
 catgccgcac atccgcttct tcatgtttctg tgaaatatgc atagtcttca ggattggaaa 180
 atccaaagta ctcagtcaat ccacgaattt tctctctagc gatacgtgga atttgactct 240
 cataagaata caaagcagcc actcctgcag ctaaagaatc tcctgtacac caccgcatga 300
 aagtagctac tttcgttttt gctgcttcac taggctcatg agcctctaac tcttctggag 360
 taactcctag agcaaacaca aactgcttcc acaaatcaat atgattaggg taaccgttct 420
 cttcatccat caagttatct aacaataact taocgcctc taaatcatcg caacgactat 480
 gaatcgaga taaatattta ggaaaggctt tgatatgtaa ataatagtct ttggcacgag 540
 cctgtaattg ctcttttagta agctccccct tgcaccattt cacataaaac gtgtgttcta 600
 gcatatgctt attttgaata attaaatcta actgatctaa aaaattcata aacacctcca 660
 tcatttcttt tcttgactcc acgtaacc 688

<210> 63
 <211> 269
 <212> DNA
 <213> Chlamydia trachomatis

<400> 63
 atgttgaaat cacacaagct gttcctaaat atgctacggg aggatctccc tatcctgttg 60
 aaattactgc tacaggtaaa agggattgtg ttgatgttat cattactcag caattaccaat 120
 gtgaagcaga gttcgtacgc agtgatccag cgacaactcc tactgctgat ggtaagctag 180
 tttggaaaat tgaccgctta ggacaaggcg aaaagagtaa aattactgta tgggtaaaac 240
 ctcttaaaga aggttgctgc tttacagct 269

<210> 64
 <211> 1339
 <212> DNA
 <213> Chlamydia trachomatis

<400> 64
 cttttattat ggcttctggt gatgatgtca acgatatcga cctgctatct cgaggagatt 60
 ttaaaattgt tatacagacg gctccagagg agatgcatgg attagcggac tttttggctc 120
 ccccgcgcaa ggatcttggg attctctccg cctgggaagc tggtagctg cgttacaaac 180
 agctagttaa tccttaggaa acatttctgg acctatgcc atcacattgg ctccgtgatc 240
 cacatagaga gtttctcccg taattgcgct agctagggga gagactaaga aggctgctgc 300
 tgcgcctact tgctcagctt ccattggaga aggtagtgga gccagtcctt ggtagtaatc 360
 caccattctc tcaataaatc caatagcttt tcctgcacgg ctagctaattg gccctgccga 420
 gatagtattc actcggactc cccaacgtcg gccggcttcc caagccagta cttttgtatc 480
 actttctaaa gcagcttttg ctgcgttcat tcctccgcca taccctggaa cagcacgcat 540
 ggaagcaaga taagttagag agatggtgct agctcctgca ttcataattg ggccaaaatg 600
 agagagaagg ctgataaagg agtagctgga tgtaacttaag gcggcaagat agcctttacg 660
 agaggtatca agtaatggtt tagcaatttc cggactgttt gctaaagagt gaacaagaat 720
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 agatgcattg aattttccta actcccaaga ttgagagaaa attttataga taggaacca 960
 ggtccccaca agtatggtt cgctgtcttc tgctaacatt ttggcaatgc ccagccata 1020
 cccgttatca tcgcctatgc cggctatgaa agcaattttt cctgttaaat caattttcaa 1080
 catgagctaa ccccatTTTT tcttcttgag agaggagagt agcagattct ttattattga 1140
 gaaacggggc tcataatata taaggagtag attcactggc tggatccagg tttctagagt 1200

[illegible]

<400> 66
gatccgaatt cggcagcagg aggaatggaa gggccctccg attttaaadc tgctaccatg 60

<210> 67
<211> 276
<212> DNA
<213> Chlamydia

```
<210> 68
<211> 248
<212> DNA
<213> Chlamydia
```

<210> 69
<211> 715
<212> DNA
<213> Chlamydia

```
<220>
<221> unsure
<222> (34)
<223> n=A,T,C or G
```

<400> 69						
gatccgaatt	cggcacgaga	aggtagatcc	gatntcagca	aaagtgctcc	taaaggaaga	60
ttccttcggt	atcctgcagc	aaataagggtg	gcacactcca	tctcggacag	tttgagcttt	120
attttcatat	agtttttcgac	ggaactcttt	attaaactcc	caaaaccgaa	tgttagtcgt	180
gtgggtgatg	cctatatggt	aagggaggtt	tttggcttcg	agaatatgg	tgatcatttt	240
ttgtacgaca	aaattagcta	atgcagggac	ctctgggggg	aagtatgcat	ctgatgttcc	300
atcttttcgg	atgctagcaa	cagggacaaa	ataatctcct	atttggtagt	gggatcttaa	360
gcctccgcac	atgcccaaca	tgatcgctgc	tgtagcattg	ggaaggaaag	aacacagatc	420
tacggtaaga	gctgctcctg	gagagcctaa	tttaaaatcg	atgattgaag	tgtgaatttg	480
aggcgcatgc	gctgccgaaa	acatggatcc	tcgagaaaaca	gggacctgat	agattttcagc	540
gaaaacatgc	acggtaatac	cctmaaatag	taagaaggag	ataggctcgg	aactcttgaa	600
tggtatagcc	ggtatagcgc	tctagcatgt	cacaggcgat	tgtttcttcg	ctgatttttt	660
tatgttgatg	ggtcataaat	cacagatatt	ataatggtta	gagaatcttt	ttttc	715

<210> 70
 <211> 323
 <212> DNA
 <213> Chlamydia

<400> 70
 gatccgaatt cggcacgagc agaacgtaaa cagcacactt aaaccgtgta tgagggttaa 60
 cactgttttg caagcaaaca accattcctc tttccacatc gttcttacca atacctctga 120
 ggagcaatcc aacattctct cctgcacgac cttctgggag ttcttttctg aacatttcaa 180
 ccccgtaac aatcgtttct ttagtatctc taagaccgac caactgaact ttatcgga 240
 ctttaacaat tccacgctca atacgtccag ttactacagt tcctcgtccg gagatagaga 300
 acacgtcctc aatgggcatt aag 323

<210> 71
 <211> 715
 <212> DNA
 <213> Chlamydia

<400> 71
 gatccgaatt cggcacgagg aaaaaaagat tctctaacca ttataatattc tgtgatttat 60
 gacccatcaa cataaaaaaa tcagcgaaga aacaatcgcc tgtgacatgc tagagcggct 120
 ataccggctc taccattcaa gagttccagc cctatctcct tcttactaat tttgggtatt 180
 acgtggatgt tttcgctgaa atctatcagg tccctgtttc tcgaggatcc atgttttcgg 240
 gcagcgcagc cgcctcaa atcacactca atcatcgatt ttaaattagg ctctccagga 300
 gcagctctta ccgtagatct gtgttctttc cttcccaatg ctacagcagc gatcatgttg 360
 ggcattgtgc gaggtttaag atcccaactac caaataggag attattttgt ccctgttgct 420
 agcatccgaa aagatggaac atcagatgca tacttcccc cagaggtccc tgcattagct 480
 aattttgtcg tacaaaaaat gatcaccaat attctcgaag ccaaaaacct cccttaccat 540
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 aaactatatg aaaataaagc tcaaactgtc gagatggagt gtgccacctt atttgctgca 660
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<210> 72
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 <221> unsure
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 <222> (634)
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caatgcggcg	tggagtactg	ggtatcgggc	tgtgttggtg	tggattttct	ccattacaca	180
actatatagg	atcgctagat	tgtttcggtc	gtcccttaca	gatgacgcaa	agtaatcttg	240
tagatgcctt	agcagtttgcg	cctatttggt	gtatgggaga	ggggaatgag	caaacaccgt	300
tagcggtgat	agagcaggca	cctaatatgg	tctaccattc	atatcctact	ttctcgagaag	360
agtatttgat	ttttgcgcata	qatqaaacag	aggacttata	cggacctttt	ttgcaagcgg	420

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465

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 <211> 545
 <212> DNA
 <213> Chlamydia

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<210> 76
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<220>
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 <222> (788)
 <223> n=A,T,C or G
 <221> unsure
 <222> (789)
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 actgtaataa aaagagcgcg cttcctttat gcaaaatcaa tttgaacaac tccttactga 240
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 tgctttgtct atcaatggat ctccgcaatc taatattaaa ggcaactctag gatacgggtga 480
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 attatcccaa tcccgcagta tcatccagca atcttccatt cgaaagattt ggaatcagat 720
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 aaagttgnng ggaata 797

<210> 77
 <211> 399
 <212> DNA
 <213> Chlamydia

<400> 77
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<210>	81
<211>	2085
<212>	DNA

<213> Chlamydia

<400> 81

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agcagtttaa acgtgtttta gagtgtcctg tattaatagg ccattctaga aaatcgtgtt 300
tgagtatgtt gggccgattt aatagtgcag atcgtgattg ggaaacgatc ggctgttctg 360
tatctcttca tgatcgagga gttgattatc tacgtgtgca tcaggttgaa ggtaacagac 420
gtgccttagc cgctgctgct tgggctggta tgtttgtatg atccaagcaa caggtatcgt 480
tgctattgat cccagaggag tgatgggagc tttaggcaag ctcccttggg gttatcccga 540
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gatgcatcca ccacaatgca taggagtttc ttcccttgca gagtatggga cactatcttt 720
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<210> 82

<211> 405

<212> DNA

<213> Chlamydia

<400> 82

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<210> 83

<211> 379

<212> DNA

<213> Chlamydia

<400> 83

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<210> 84

<211> 715

<212> DNA

<213> Chlamydia

<400> 84

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cgccttccat	tcttgatgca	ataatatctg	ctgagactaa	gaacatgctc	ccagagcttt	180
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caaggattat	ttgctggtcc	ttgagcggct	ctgtcatttg	cccaactttg	atattatcag	600
caaagacgca	gttttgagtg	ttatacaaat	aaaaaccaga	atttccatt	ttaaaaactct	660
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<210> 85

<211> 476

<212> DNA

<213> Chlamydia

<400> 85

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taggacaaat	ggagtaccag	ggaggaggag	ctctattttg	tgaaaatatt	tctctttctg	420
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<210> 86

<211> 1551

<212> DNA

<213> Chlamydia

<400> 86

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<210> 87

<211> 3031

<212> DNA

<213> Chlamydia

<400> 87

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<211> 976
<212> DNA
<213> Chlamydia
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<210> 89
<211> 94
<212> PRT
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 35 40 45
 Ile Lys Lys His Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu
 50 55 60
 Pro Asp Ala Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp
 65 70 75 80
 Met Phe Gln Met Thr Lys Ala Leu Ser Lys His Ile Val Lys
 85 90

<210> 90
 <211> 474
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<400> 90
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 35 40 45
 Gly Thr Cys Leu Asn Arg Gly Cys Ile Pro Ser Lys Ala Leu Leu Ala
 50 55 60
 Gly Ala Glu Val Val Thr Gln Ile Arg His Ala Asp Gln Phe Gly Ile
 65 70 75 80
 His Val Glu Gly Phe Ser Ile Asn Tyr Pro Ala Met Val Gln Arg Lys
 85 90 95
 Asp Ser Val Val Arg Ser Ile Arg Asp Gly Leu Asn Gly Leu Ile Arg
 100 105 110
 Ser Asn Lys Ile Thr Val Phe Ser Gly Arg Gly Ser Leu Ile Ser Ser
 115 120 125
 Thr Glu Val Lys Ile Leu Gly Glu Asn Pro Ser Val Ile Lys Ala His
 130 135 140
 Ser Ile Ile Leu Ala Thr Gly Ser Glu Pro Arg Ala Phe Pro Gly Ile
 145 150 155 160
 Pro Phe Ser Ala Glu Ser Pro Arg Ile Leu Cys Ser Thr Gly Val Leu
 165 170 175
 Asn Leu Lys Glu Ile Pro Gln Lys Met Ala Ile Ile Gly Gly Gly Val
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FOE40" QET4360

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<210> 91
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[illegible]

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<211> 202
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			20					25					30		
Ser	Leu	Ala	Asp	Phe	Arg	Gly	Lys	Tyr	Val	Val	Leu	Phe	Phe	Tyr	Pro
		35					40					45			
Lys	Asp	Phe	Thr	Tyr	Val	Cys	Pro	Thr	Glu	Leu	His	Ala	Phe	Gln	Asp
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Arg	Leu	Val	Asp	Phe	Glu	Glu	His	Gly	Ala	Val	Val	Leu	Gly	Cys	Ser
65					70					75					80
Val	Asp	Asp	Ile	Glu	Thr	His	Ser	Arg	Trp	Leu	Thr	Val	Ala	Arg	Asp
				85					90					95	
Ala	Gly	Gly	Ile	Glu	Gly	Thr	Glu	Tyr	Pro	Leu	Leu	Ala	Asp	Pro	Ser
			100					105					110		

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
 115 120 125
 Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His
 130 135 140
 Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu
 145 150 155 160
 Arg Ile Leu Asp Ser Leu Ile Phe Phe Glu Asn His Gly Met Val Cys
 165 170 175
 Pro Ala Asn Trp Arg Ser Gly Glu Arg Gly Met Val Pro Ser Glu Glu
 180 185 190
 Gly Leu Lys Glu Tyr Phe Gln Thr Met Asp
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<210> 93
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> made in a lab

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 Asp Lys Leu

<210> 94
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<220>
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 1 5 10 15
 Val Phe Gly Thr
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<210> 95
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 <212> PRT
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Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly Thr
 1 5 10 15
 Glu Lys Pro Ile
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<210> 96
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 96
 Asp Asp Lys Leu Ala Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met
 1 5 10 15
 Phe Gln Met Thr
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<210> 97
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 97
 Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys
 1 5 10 15
 Met Val Ser Gln
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<210> 98
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 98
 Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly
 1 5 10 15
 Thr Glu Lys Pro
 20

<210> 99
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 99
 Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly

1 5 10 15

<210> 100
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 100
 Lys Met Trp Asp Tyr Ile Lys Glu Asn Ser Leu Gln Asp Pro Thr
 1 5 10 15

<210> 101
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 101
 Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys
 1 5 10 15
 Gln Asp Gln Lys
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<210> 102
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 102
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 1 5 10 15
 Lys Arg Asn Ile
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<210> 103
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 103
 Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln Asp Gln Lys
 1 5 10 15

<210> 104
 <211> 20
 <212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 104

Ala	Glu	Leu	Thr	Glu	Glu	Glu	Val	Gly	Arg	Leu	Asn	Ala	Leu	Leu	Gln
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Ser	Asp	Tyr	Val												
			20												

<210> 105

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 105

Leu	Gln	Ser	Asp	Tyr	Val	Val	Glu	Gly	Asp	Leu	Arg	Arg	Arg	Val	Gln
1				5				10						15	
Ser	Asp	Ile	Lys	Arg											
			20												

<210> 106

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 106

Met	Pro	Arg	Ile	Ile	Gly	Ile	Asp	Ile	Pro	Ala	Lys	Lys	Lys	Leu	Lys
1				5				10						15	
Ile	Ser	Leu	Thr												
			20												

<210> 107

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 107

Ala	Glu	Leu	Thr	Glu	Glu	Glu	Val	Gly	Arg	Leu	Asn	Ala	Leu	Leu	Gln
1				5				10						15	
Ser	Asp	Tyr	Val												
			20												

<210> 108

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 108

Leu Asn Ala Leu Leu Gln Ser Asp Tyr Val Val Glu Gly Asp Leu Arg
 1 5 10 15
 Arg Arg Val Gln
 20

<210> 109

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 109

Leu Asn Ser Leu Leu Gln Ser Glu Tyr Thr Val Glu Gly Asp Leu Arg
 1 5 10 15
 Arg Arg Val Gln
 20

<210> 110

<211> 1461

<212> DNA

<213> Chlamydia

<400> 110

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<210> 111

<400> 113						
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aacgaaaaaa	gaaggatatt	tgattccttc	tgcagggatt	gatgaatcg	atacggacca	180
gcctttttgt	ttatatccta	aagatatatt	gggatcggtg	aatcgcatcg	gagaattggt	240
aagaaattat	tttcgagtga	aagagctagg	cgtaaatcatt	acagatagcc	atactactcc	300
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ca						1142

<210> 114
 <211> 976
 <212> DNA
 <213> Chlamydia

<400> 114
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 ggcacaaagt accttctggg cgcactactt taaagattcg tcgtcctttt ggtactacga 180
 gagaagttcg tgtgaaatgg cgttatgttc ctgaaggtgt aggagatttg gctaccatag 240
 ctcttctat cagggctcca cagttacaga aatcgatgag aagctttttc cctaagaaag 300
 atgatgcgtt tcatcggtct agttcgctat tctactctcc aatggttccg catttttggg 360
 cagagcttcg caatcattat gcaacgagtg gtttgaaaag cgggtacaat attgggagta 420
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 cttatatttc ttcggtgact gatggggatg gtaagagcca taaagtagga tttctaagaa 540
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 aagaatttgc taagattatt caagtatttt cttctaatac agaagctttg attatcgacc 660
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 ttggacgtca agtattgaat tgttgagta aaggggatat cgagttatca acacctattc 960
 ctctttttgg ttttga 976

<210> 115
 <211> 995
 <212> DNA
 <213> Chlamydia

<400> 115
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 tatcgaccta gggacgacca actccttgct ctctgttatg gaaggtggcc aacctaaagt 120
 tattgcctct tctgaaggaa ctcgactac tcttctatc gttgctttta aaggtggcga 180
 aactcttgtt ggaattcctg caaaacgtca ggcagtaacc aatcctgaaa aaacattggc 240
 ttctactaag cgattcatcg gtagaaaatt ctctgaagtc gaatctgaaa ttaaaaacgt 300
 cccctacaaa gttgctccta actcgaaaag agatgcggtc tttgatgtgg aacaaaaact 360
 gtacactcca gaagaaatcg gcgctcagat cctcatgaag atgaaggaaa ctgctgaggc 420
 ttatctcgga gaaacagtaa cggaagcagc cattaccgta ccagcttact ttaacgattc 480
 tcaaagagct tctacaaaag atgctggacg tatcgagga ttagatgta aacgcattat 540
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 agtttttgaa gttctctcaa ccaacgggga tactcacttg ggaggagacg acttcgacgg 720
 agtcatcatc aactggatgc ttgatgaatt caaaaaacaa gaaggcattg atctaagcaa 780
 agataacatg gctttgcaaa gattgaaaga tgctgctgaa aaagcaaaaa tagaattgtc 840
 tgggtgatcg tctactgaaa tcaatcagcc attcatcact atcgacgcta atggacctaa 900
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 gcgaacccaa caaccttgtg ctcaggcttt aaaag 995

<210> 116
 <211> 437
 <212> DNA
 <213> Chlamydia

<400> 116
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 ggaaccctta cttgtaaaaa ctctcaccgt ctacaatttt tgaaaaactc ttccgataaa 180

caaggtggag gaatctacgg agaagacaac atcaccctat ctaatttgac agggaagact 240
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 aaagctctta caatgacagg actggatagt ttctgtttaa ttaataacac atcagaaaaa 360
 catggtggtg gagcctttgt taccaaagaa atctctcaga cttacacctc tgatgtggaa 420
 acaattccag gaatcac 437

<210> 117
 <211> 446
 <212> DNA
 <213> Chlamydia

<400> 117
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 caacaagaca acgacaatgg gaatacattc ttgctcactg cgaggaaggt tctattgtta 120
 aggacaaat taccgaaaa gttaagggtg gtttgatcgt agatattggg atggaagcct 180
 tccttcagg atcccaaata gacaataaga agatcaagaa cttagatgat tacgtaggca 240
 aggtttgtga gttcaaaatt ctcaaaatca acgtggatcg tcggaacgtt gttgtatcta 300
 gaagagaact tctcgaagct gaacgcattt ctaagaaagc agagttagtc gagcaaatca 360
 ctatcggtga acgtcgcaaa ggtatcggtta agaatatcac agatttcgga gtattcttgg 420
 atcttgatgg cattgacggc ctactc 446

<210> 118
 <211> 951
 <212> DNA
 <213> Chlamydia

<400> 118
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 gattccctct ttatcctgaa atcgatctgg aaacgctagt ttagtgggag actctatgcc 180
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 gactacagtt gttacaggtt tagcagcatc tatgggatct gtattgagtt tgtgtgctgt 480
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 gaaagctatc gatcgagata tgtggatgag tgcaaatgaa gcaatggagt ttggactgtt 720
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<210> 119
 <211> 953
 <212> DNA
 <213> Chlamydia

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 ataattccatc aaccaatgct tctattacaa ttggtttgga tgcggaaaaa gcttaccagc 180
 ttattctaga aaagtggga gatcaaatc ttggtggaat tgctgatact attgttgata 240
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 cttttaacaa ctttccaatc actaataaaa ttcaatgcaa cgggttatcc actcccagga 360
 acattgaaac tttattagga ggaactgaaa taggaaaatt cacagtcaca cccaaaagct 420

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ctgggagcat gttcttagtc tcagcagata ttattgcac aagaatggaa ggcggcggtg 480
ttctagcttt ggtacgagaa ggtgattcta agccctacgc gattagttat ggataactcat 540
caggcggtcc taatttatgt agtctaagaa ccagaattat taatacagga ttgactccga 600
caacgtattc attacgtgta ggcgggttag aaagcgggtg ggtatgggtt aatgcccttt 660
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tacctcaaac aaacgcttaa acaattttta ttggattttt cttatagggtt ttatatttag 780
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<210> 120
<211> 897
<212> DNA
<213> Chlamydia

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<220>
<221> misc_feature
<222> (1)...(897)
<223> n = A, C, T or G

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<400> 120
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gttaaggtcg ccaagtctgc tgccgaattg accgcaataa ttttgaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
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<210> 121
<211> 298
<212> PRT
<213> Chlamydia

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<400> 121
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Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
          35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
          50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
          65          70          75          80
Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
          85          90          95

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<210> 122
<211> 897
<212> DNA
<213> Chlamydia
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```
<210> 123
<211> 298
<212> PRT
<213> Chlamydia
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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
1 5 10 15

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<210> 124
<211> 897
<212> DNA
<213> Chlamydia
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<400> 124						
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gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgctg	ctttagggaa	tgcccttaac	ggagctgtgc	caggaacagt	tcaaagtgcg	300
caaacgtctc	tctctcacat	gaaagctgct	agtcagaaaa	cgcgaagaagg	ggatgagggg	360
ctcacgctcag	atcttttgtg	gtctcataag	cgcagagcgg	ctgcggctgt	ctgtagcatc	420
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gaagtgccgg	gagaggaaaa	tgcttgcgag	aagaaagctg	ctggagagaa	agccaagacg	720
ttcacgctgc	tcaagtattg	actcctcact	atgctcgaga	agtttttgga	atgcgttgcc	780
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897

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<210> 125
<211> 298
<212> PRT
<213> Chlamydia
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	<400> 125														
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Lys	Thr	Lys 35	Gly	Met	Asp	Lys	Thr 40	Ile	Lys	Val	Ala	Lys 45	Ser	Ala	Ala
Glu	Leu 50	Thr	Ala	Asn	Ile	Leu 55	Glu	Gln	Ala	Gly	Gly 60	Ala	Gly	Ser	Ser
Ala 65	His	Ile	Thr	Ala	Ser 70	Gln	Val	Ser	Lys	Gly 75	Leu	Gly	Asp	Ala	Arg 80
Thr	Val	Val	Ala	Leu 85	Gly	Asn	Ala	Phe	Asn 90	Gly	Ala	Leu	Pro	Gly 95	Thr
Val	Gln	Ser	Ala 100	Gln	Ser	Phe	Phe	Ser 105	His	Met	Lys	Ala	Ala	Ser	Gln
Lys	Thr	Gln 115	Glu	Gly	Asp	Glu	Gly 120	Leu	Thr	Ala	Asp	Leu 125	Cys	Val	Ser
His	Lys 130	Arg	Arg	Ala	Ala	Ala 135	Ala	Val	Cys	Ser	Ile 140	Ile	Gly	Gly	Ile
Thr 145	Tyr	Leu	Ala	Thr	Phe 150	Gly	Ala	Ile	Arg	Pro 155	Ile	Leu	Phe	Val	Asn 160
Lys	Met	Leu	Ala 165	Lys	Pro	Phe	Leu	Ser	Ser 170	Gln	Thr	Lys	Ala	Asn 175	Met
Gly	Ser	Ser 180	Val	Ser	Tyr	Ile	Met	Ala 185	Ala	Asn	His	Ala	Ala	Ser	Val
Val	Gly 195	Ala	Gly	Leu	Ala	Ile	Ser 200	Ala	Glu	Arg	Ala	Asp 205	Cys	Glu	Ala
Arg	Cys 210	Ala	Arg	Ile	Ala	Arg 215	Glu	Glu	Ser	Leu	Leu	Glu	Val	Pro	Gly
Glu 225	Glu	Asn	Ala	Cys	Glu 230	Lys	Lys	Val	Ala	Gly 235	Glu	Lys	Ala	Lys	Thr 240
Phe	Thr	Arg	Ile	Lys 245	Tyr	Ala	Leu	Leu	Thr 250	Met	Leu	Glu	Lys	Phe 255	Leu
Glu	Cys	Val	Ala 260	Asp	Val	Phe	Lys	Leu 265	Val	Pro	Leu	Pro	Ile 270	Thr	Met
Gly	Ile	Arg 275	Ala	Ile	Val	Ala	Ala 280	Gly	Cys	Thr	Phe	Thr 285	Ser	Ala	Ile
Ile	Gly 290	Leu	Cys	Thr	Phe	Cys 295	Ala	Arg	Ala						

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<210> 126
<211> 897
<212> DNA
<213> Chlamydia
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<400>	126						
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attaaggttg	ccaagctctgc	tgccgaattg	accgcaata	ttttggaaca	agctggaggc		180
cqgggtcttt	ccgcacacat	tacagcttcc	caaggttcca	aaggattagg	ggaatcgaga		240


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actgttgtcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atcttttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg caaaaccggt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcggctaa ccattgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcggaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc 660
gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

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<210> 127

<211> 298

<212> PRT

<213> Chlamydia

<400> 127

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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1          5          10          15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20          25          30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65          70          75          80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85          90          95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100          105          110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115          120          125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
 130          135          140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145          150          155          160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165          170          175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180          185          190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195          200          205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
 210          215          220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
 225          230          235          240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245          250          255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260          265          270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275          280          285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290          295

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<210> 128
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 128
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 acacagccca gcaataaaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120
 gttaaggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240
 actgttgctg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgctggctgt ctgtggcttc 420
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gttgtcaac 480
 aaaatgctgg tgaaccggtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 129
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 129
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Gly Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Val Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Val Asn Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180 185 190
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Lys Arg Val Ala Gly Glu Lys Ala Lys Thr

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<210> 130
<211> 897
<212> DNA
<213> Chlamydia
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<210> 131
<211> 298
<212> PRT
<213> Chlamydia
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Met	Ala	Ala	Ile	Cys	Gly	Arg	Leu	Gly	Ser	Gly	Thr	Gly	Asn	Ala	Leu
1				5					10					15	
Lys	Ala	Phe	Phe	Thr	Gln	Pro	Ser	Asn	Lys	Met	Ala	Arg	Val	Val	Asn
			20					25					30		
Lys	Thr	Lys	Gly	Met	Asp	Lys	Thr	Val	Lys	Val	Ala	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Asn	Ile	Leu	Glu	Gln	Ala	Gly	Gly	Ala	Gly	Ser	Ser
	50					55					60				
Ala	His	Ile	Thr	Ala	Ser	Gln	Val	Ser	Lys	Gly	Leu	Gly	Asp	Ala	Arg
65					70					75					80
Thr	Val	Leu	Ala	Leu	Gly	Asn	Ala	Phe	Asn	Gly	Ala	Leu	Pro	Gly	Thr
				85					90					95	
Val	Gln	Ser	Ala	Gln	Ser	Phe	Phe	Ser	Tyr	Met	Lys	Ala	Ala	Ser	Gln
			100					105					110		
Lys	Pro	Gln	Glu	Gly	Asp	Glu	Gly	Leu	Val	Ala	Asp	Leu	Cys	Val	Ser
		115					120					125			
His	Lys	Arg	Arg	Ala	Ala	Ala	Ala	Val	Cys	Ser	Phe	Ile	Gly	Gly	Ile
	130					135					140				
Thr	Tyr	Leu	Ala	Thr	Phe	Gly	Ala	Ile	Arg	Pro	Ile	Leu	Phe	Val	Asn

145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Gly Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Asn Arg Val
 290 295

<210> 132

<211> 897

<212> DNA

<213> Chlamydia

<400> 132

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gttaaggtcg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttctcg	ctttagggaa	tgcttttaac	ggagcgttgc	caggaacagt	tcaaagtgcg	300
caaagcttct	tctcttacat	gaaagctgct	agtcagaaac	cgcaagaagg	ggatgagggg	360
ctcgtagcag	atctttgtgt	gtctcataag	cgcagagcgg	ctgcggctgt	ctgtagcttc	420
atcggaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	cgcaaccgtt	tctttcttcc	caaactaaag	caaatatggg	atcttctggt	540
agctatatta	tggcggctaa	ccatgcagcg	tttgtggtgg	gttctggact	cgctatcagt	600
gcggaagag	cagattgcga	agcccgtctg	gctcgtattg	cgagagaaga	gtcgtcactc	660
gaattgtcgg	gagaggaaaa	tgcttgtgag	aggagagtcg	ctggagagaa	agccaagacg	720
ttcacgcgca	tcaagtatgc	actcctcact	atgctcgaga	agtttttggg	atgcgttgcc	780
gacgttttca	aattggtgcc	gttgccctatt	acaatgggta	ttcgtgcaat	tgtggctgcg	840
ggatgtacgt	tcacttctgc	agttattgga	ttgtggactt	tctgcaacag	agtataa	897

<210> 133

<211> 298

<212> PRT

<213> Chlamydia

<400> 133

Met Ala Ala Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg

<210> 134
<211> 897
<212> DNA
<213> Chlamydia

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<210> 135
<211> 298
<212> PRT
<213> Chlamydia
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<400> 135

Met	Ala	Ser	Ile	Cys	Gly	Arg	Leu	Gly	Ser	Gly	Thr	Gly	Asn	Ala	Leu
1				5					10					15	
Lys	Ala	Phe	Phe	Thr	Gln	Pro	Asn	Asn	Lys	Met	Ala	Arg	Val	Val	Asn
			20					25					30		
Lys	Thr	Lys	Gly	Met	Asp	Lys	Thr	Ile	Lys	Val	Ala	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Asn	Ile	Leu	Glu	Gln	Ala	Gly	Gly	Ala	Gly	Ser	Ser
	50				55						60				
Ala	His	Ile	Thr	Ala	Ser	Gln	Val	Ser	Lys	Gly	Leu	Gly	Asp	Ala	Arg
65					70				75						80
Thr	Val	Val	Ala	Leu	Gly	Asn	Ala	Phe	Asn	Gly	Ala	Leu	Pro	Gly	Thr
				85					90					95	
Val	Gln	Ser	Ala	Gln	Ser	Phe	Phe	Ser	His	Met	Lys	Ala	Ala	Ser	Gln
			100					105					110		
Lys	Thr	Gln	Glu	Gly	Asp	Glu	Gly	Leu	Thr	Ala	Asp	Leu	Cys	Val	Ser
		115					120					125			
His	Lys	Arg	Arg	Ala	Ala	Ala	Ala	Val	Cys	Ser	Ile	Ile	Gly	Gly	Ile
	130				135						140				
Thr	Tyr	Leu	Ala	Thr	Phe	Gly	Ala	Ile	Arg	Pro	Ile	Leu	Phe	Val	Asn
145					150				155						160
Lys	Met	Leu	Ala	Lys	Pro	Phe	Leu	Ser	Ser	Gln	Thr	Lys	Ala	Asn	Met
				165					170					175	
Gly	Ser	Ser	Val	Ser	Tyr	Ile	Met	Ala	Ala	Asn	His	Ala	Ala	Ser	Val
			180					185					190		
Val	Gly	Ala	Gly	Leu	Ala	Ile	Ser	Ala	Glu	Arg	Ala	Asp	Cys	Glu	Ala
		195					200					205			
Arg	Cys	Ala	Arg	Ile	Ala	Arg	Glu	Glu	Ser	Leu	Leu	Glu	Met	Pro	Gly
	210				215						220				
Glu	Glu	Asn	Ala	Cys	Glu	Lys	Lys	Val	Ala	Gly	Glu	Lys	Ala	Lys	Thr
225					230					235					240
Phe	Thr	Arg	Ile	Lys	Tyr	Ala	Leu	Leu	Thr	Met	Leu	Glu	Lys	Phe	Leu
				245					250					255	
Glu	Cys	Val	Ala	Asp	Val	Phe	Lys	Leu	Val	Pro	Leu	Pro	Ile	Thr	Met
			260					265					270		
Gly	Ile	Arg	Ala	Ile	Val	Ala	Ala	Gly	Cys	Thr	Phe	Thr	Ser	Ala	Ile
	275						280						285		
Ile	Gly	Leu	Cys	Thr	Phe	Cys	Ala	Arg	Ala						
	290					295									

<210> 136

<211> 882

<212> DNA

<213> Chlamydia

<400> 136

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ataaagggtg	ggaagtctgc	tgctgaatta	acggcgagta	ttttagagca	aactgggggg	180
gcagggactg	atgcacatgt	tacggcggcc	aaggtgtcta	aagcacttgg	ggacgcgcga	240
acagtaatgg	ctctagggaa	tgtcttcaat	gggtctgtgc	cagcaaccat	tcaaagtgcg	300
cgaagctgtc	tcgcccattt	acgagcggcc	ggcaaagaag	aagaaacatg	ctccaagggtg	360
aaagatctct	gtgtttctca	tagacgaaga	gctgcggctg	aggcttgtaa	tggtattgga	420
ggagcaactt	atattacaac	tttcggagcg	attcgccga	cattactcgt	taacaagctt	480
cttgccaaac	cattcctttc	ctcccaagcc	aaagaagggt	tgggagcttc	tggttggttat	540
atcatggcag	cgaaccatgc	ggcatctgtg	cttggtctg	ctttaagtat	tagcgcagaa	600
agagcagact	gtgaagagcg	gtgtgatcgc	attcgatgta	gtgaggatgg	tgaaatttgc	660

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gaaggcaata aattaacagc tatttcggaa gagaaggcta gatcatggac tctcattaag 720
tacagattcc ttactatgat agaaaaacta tttgagatgg tggcggatat cttcaagtta 780
attcctttgc caatttcgca tggaattcgt gctattgttg ctgcgggatg tacgttgact 840
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<210> 137
 <211> 293
 <212> PRT
 <213> Chlamydia

<400> 137

Met	Ala	Ser	Val	Cys	Gly	Arg	Leu	Ser	Ala	Gly	Val	Gly	Asn	Arg	Phe
1				5					10					15	
Asn	Ala	Phe	Phe	Thr	Arg	Pro	Gly	Asn	Lys	Leu	Ser	Arg	Phe	Val	Asn
			20					25					30		
Ser	Ala	Lys	Gly	Leu	Asp	Arg	Ser	Ile	Lys	Val	Gly	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Ser	Ile	Leu	Glu	Gln	Thr	Gly	Gly	Ala	Gly	Thr	Asp
		50				55					60				
Ala	His	Val	Thr	Ala	Ala	Lys	Val	Ser	Lys	Ala	Leu	Gly	Asp	Ala	Arg
65					70					75					80
Thr	Val	Met	Ala	Leu	Gly	Asn	Val	Phe	Asn	Gly	Ser	Val	Pro	Ala	Thr
			85					90					95		
Ile	Gln	Ser	Ala	Arg	Ser	Cys	Leu	Ala	His	Leu	Arg	Ala	Ala	Gly	Lys
			100					105					110		
Glu	Glu	Glu	Thr	Cys	Ser	Lys	Val	Lys	Asp	Leu	Cys	Val	Ser	His	Arg
		115					120					125			
Arg	Arg	Ala	Ala	Ala	Glu	Ala	Cys	Asn	Val	Ile	Gly	Gly	Ala	Thr	Tyr
		130				135					140				
Ile	Thr	Thr	Phe	Gly	Ala	Ile	Arg	Pro	Thr	Leu	Leu	Val	Asn	Lys	Leu
145					150					155					160
Leu	Ala	Lys	Pro	Phe	Leu	Ser	Ser	Gln	Ala	Lys	Glu	Gly	Leu	Gly	Ala
			165					170					175		
Ser	Val	Gly	Tyr	Ile	Met	Ala	Ala	Asn	His	Ala	Ala	Ser	Val	Leu	Gly
			180					185					190		
Ser	Ala	Leu	Ser	Ile	Ser	Ala	Glu	Arg	Ala	Asp	Cys	Glu	Glu	Arg	Cys
		195					200					205			
Asp	Arg	Ile	Arg	Cys	Ser	Glu	Asp	Gly	Glu	Ile	Cys	Glu	Gly	Asn	Lys
		210				215					220				
Leu	Thr	Ala	Ile	Ser	Glu	Glu	Lys	Ala	Arg	Ser	Trp	Thr	Leu	Ile	Lys
225					230						235				240
Tyr	Arg	Phe	Leu	Thr	Met	Ile	Glu	Lys	Leu	Phe	Glu	Met	Val	Ala	Asp
			245					250					255		
Ile	Phe	Lys	Leu	Ile	Pro	Leu	Pro	Ile	Ser	His	Gly	Ile	Arg	Ala	Ile
			260					265					270		
Val	Ala	Ala	Gly	Cys	Thr	Leu	Thr	Ser	Ala	Val	Ile	Gly	Leu	Gly	Thr
		275					280					285			
Phe	Trp	Ser	Arg	Ala											
290															

<210> 138
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 138

<211> 16

<213> Artificial Sequence

<223> Made in a lab

<400> 139

<211> 18

<213> Artificial Sequence

<223> Made in a lab

<400> 140

<211> 18

<213> Artificial Sequence

<223> Made in a lab

<400> 141

<211> 18

<213> Artificial Sequence

<223> Made in a lab

<400> 142

1000

<210> 143
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 143
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 1 5 10 15
 Ser

<210> 144
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 144
 Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu
 1 5 10

<210> 145
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 145
 Ser Phe Ile Gly Gly Ile Thr Tyr Leu
 1 5

<210> 146
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 146
 Phe Ile Gly Gly Ile Thr Tyr Leu
 1 5

<210> 147
 <211> 9
 <212> PRT
 <213> Artificial Sequence

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      <220>
      <223> Made in a lab

      <400> 147
Cys Ser Phe Ile Gly Gly Ile Thr Tyr
 1               5

      <210> 148
      <211> 8
      <212> PRT
      <213> Artificial Sequence

      <220>
      <223> Made in a lab

      <400> 148
Cys Ser Phe Ile Gly Gly Ile Thr
 1               5

      <210> 149
      <211> 10
      <212> PRT
      <213> Artificial Sequence

      <220>
      <223> Made in a lab

      <400> 149
Cys Ser Ile Ile Gly Gly Ile Thr Tyr Leu
 1               5               10

      <210> 150
      <211> 10
      <212> PRT
      <213> Artificial Sequence

      <220>
      <223> Made in a lab

      <400> 150
Cys Gly Phe Ile Gly Gly Ile Thr Tyr Leu
 1               5               10

      <210> 151
      <211> 9
      <212> PRT
      <213> Artificial Sequence

      <220>
      <223> Made in a lab

      <400> 151
Gly Phe Ile Gly Gly Ile Thr Tyr Leu
 1               5

      <210> 152
      <211> 20

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<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 156

Leu Ser Thr Lys Cys Trp Arg Asn Arg Phe Phe Leu Pro Lys Leu Lys
 1 5 10 15
 Gln Ile Trp Asp
 20

<210> 157

<211> 53

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 157

Ile Phe Val Cys Leu Ile Ser Ala Glu Arg Leu Arg Leu Ser Val Ala
 1 5 10 15
 Ser Ser Glu Glu Leu Pro Thr Ser Arg His Ser Glu Leu Ser Val Arg
 20 25 30
 Phe Cys Leu Ser Thr Lys Cys Trp Arg Asn Arg Phe Phe Leu Pro Lys
 35 40 45
 Leu Lys Gln Ile Trp
 50

<210> 158

<211> 52

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 158

Leu Cys Val Ser His Lys Arg Arg Ala Ala Ala Ala Val Cys Ser Phe
 1 5 10 15
 Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile
 20 25 30
 Leu Phe Val Asn Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Ile
 35 40 45
 Lys Ala Asn Met
 50

<210> 159

<211> 24

<212> DNA

<213> Chlamydia

<400> 159

ttttgaagca ggtaggtgaa tatg

<210> 160

<211> 24

<212> DNA
<213> Chlamydia

<400> 160
ttaagaaatt taataaatcc ctta 24

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Ser 625	Ser	Gly	Lys	Pro	Ile 630	Asp	Asn	Trp	His	His 635	Arg	Ser	Leu	Gly	Tyr 640	
Leu	Phe	Gly	Ile	Ser 645	Thr	His	Ser	Leu	Asp 650	Asp	His	Ser	Phe	Cys 655	Leu	
Ala	Ala	Gly	Gln 660	Leu	Leu	Gly	Lys	Ser 665	Ser	Asp	Ser	Phe	Ile 670	Thr	Ser	
Thr	Glu	Thr 675	Thr	Ser	Tyr	Ile	Ala 680	Thr	Val	Gln	Ala	Gln 685	Leu	Ala	Thr	
Ser	Leu 690	Met	Lys	Ile	Ser	Ala 695	Gln	Ala	Cys	Tyr	Asn 700	Glu	Ser	Ile	His	
Glu 705	Leu	Lys	Thr	Lys	Tyr 710	Arg	Ser	Phe	Ser	Lys 715	Glu	Gly	Phe	Gly	Ser 720	
Trp	His	Ser	Val	Ala 725	Val	Ser	Gly	Glu	Val 730	Cys	Ala	Ser	Ile	Pro 735	Ile	
Val	Ser	Asn	Gly 740	Ser	Gly	Leu	Phe	Ser 745	Ser	Phe	Ser	Ile	Phe 750	Ser	Lys	

Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser Ser Gly
 755 760 765
 Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser Leu Pro
 770 775 780
 Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr Tyr Tyr
 785 790 795 800
 Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val Glu Ser
 805 810 815
 Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala Pro Met
 820 825 830
 Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln Arg
 835 840 845
 Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val Leu Arg
 850 855 860
 Gly Gln Ser His Ser Tyr Ser Leu Asp Leu Gly Thr Thr Tyr Arg Phe
 865 870 875 880

<210> 176

<211> 982

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(982)

<223> Xaa = Any Amino Acid

<400> 176

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 Pro Tyr Thr Val Ile Gly Asp Pro Ser Gly Thr Thr Val Phe Ser Ala
 20 25 30
 Gly Glu Leu Thr Leu Lys Asn Leu Asp Asn Ser Ile Ala Ala Leu Pro
 35 40 45
 Leu Ser Cys Phe Gly Asn Leu Leu Gly Ser Phe Thr Val Leu Gly Arg
 50 55 60
 Gly His Ser Leu Thr Phe Glu Asn Ile Arg Thr Ser Thr Asn Gly Ala
 65 70 75 80
 Ala Leu Ser Asn Ser Ala Ala Asp Gly Leu Phe Thr Ile Glu Gly Phe
 85 90 95
 Lys Glu Leu Ser Phe Ser Asn Cys Asn Ser Leu Leu Ala Val Leu Pro
 100 105 110
 Ala Ala Thr Thr Asn Lys Gly Ser Gln Thr Pro Thr Thr Ser Thr
 115 120 125
 Pro Ser Asn Gly Thr Ile Tyr Ser Lys Thr Asp Leu Leu Leu Leu Asn
 130 135 140
 Asn Glu Lys Phe Ser Phe Tyr Ser Asn Leu Val Ser Gly Asp Gly Gly
 145 150 155 160
 Ala Ile Asp Ala Lys Ser Leu Thr Val Gln Gly Ile Ser Lys Leu Cys
 165 170 175
 Val Phe Gln Glu Asn Thr Ala Gln Ala Asp Gly Gly Ala Cys Gln Val
 180 185 190
 Val Thr Ser Phe Ser Ala Met Ala Asn Glu Ala Pro Ile Ala Phe Val
 195 200 205
 Ala Asn Val Ala Gly Val Arg Gly Gly Gly Ile Ala Ala Val Gln Asp
 210 215 220
 Gly Gln Gln Gly Val Ser Ser Ser Thr Ser Thr Glu Asp Pro Val Val

225					230					235					240
Ser	Phe	Ser	Arg	Asn	Thr	Ala	Val	Glu	Phe	Asp	Gly	Asn	Val	Ala	Arg
				245					250					255	
Val	Gly	Gly	Gly	Ile	Tyr	Ser	Tyr	Gly	Asn	Val	Ala	Phe	Leu	Asn	Asn
			260					265					270		
Gly	Lys	Thr	Leu	Phe	Leu	Asn	Asn	Val	Ala	Ser	Pro	Val	Tyr	Ile	Ala
		275					280					285			
Ala	Lys	Gln	Pro	Thr	Ser	Gly	Gln	Ala	Ser	Asn	Thr	Ser	Asn	Asn	Tyr
	290					295					300				
Gly	Asp	Gly	Gly	Ala	Ile	Phe	Cys	Lys	Asn	Gly	Ala	Gln	Ala	Gly	Ser
305					310					315					320
Asn	Asn	Ser	Gly	Ser	Val	Ser	Phe	Asp	Gly	Glu	Gly	Val	Val	Phe	Phe
				325					330					335	
Ser	Ser	Asn	Val	Ala	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Lys
			340					345					350		
Leu	Ser	Val	Ala	Asn	Cys	Gly	Pro	Val	Gln	Phe	Leu	Arg	Asn	Ile	Ala
		355					360					365			
Asn	Asp	Gly	Gly	Ala	Ile	Tyr	Leu	Gly	Glu	Ser	Gly	Glu	Leu	Ser	Leu
	370					375					380				
Ser	Ala	Asp	Tyr	Gly	Asp	Ile	Ile	Phe	Asp	Gly	Asn	Leu	Lys	Arg	Thr
385					390					395					400
Ala	Lys	Glu	Asn	Ala	Ala	Asp	Val	Asn	Gly	Val	Thr	Val	Ser	Ser	Gln
			405						410					415	
Ala	Ile	Ser	Met	Gly	Ser	Gly	Gly	Lys	Ile	Thr	Thr	Leu	Arg	Ala	Lys
			420					425					430		
Ala	Gly	His	Gln	Ile	Leu	Phe	Asn	Asp	Pro	Ile	Glu	Met	Ala	Asn	Gly
		435					440					445			
Asn	Asn	Gln	Pro	Ala	Gln	Ser	Ser	Lys	Leu	Leu	Lys	Ile	Asn	Asp	Gly
	450					455					460				
Glu	Gly	Tyr	Thr	Gly	Asp	Ile	Val	Phe	Ala	Asn	Gly	Ser	Ser	Thr	Leu
465					470					475					480
Tyr	Gln	Asn	Val	Thr	Ile	Glu	Gln	Gly	Arg	Ile	Val	Leu	Arg	Glu	Lys
			485						490					495	
Ala	Lys	Leu	Ser	Val	Asn	Ser	Leu	Ser	Gln	Thr	Gly	Gly	Ser	Leu	Tyr
			500					505					510		
Met	Glu	Ala	Gly	Ser	Thr	Leu	Asp	Phe	Val	Thr	Pro	Gln	Pro	Pro	Gln
	515						520					525			
Gln	Pro	Pro	Ala	Ala	Asn	Gln	Leu	Ile	Thr	Leu	Ser	Asn	Leu	His	Leu
	530				535						540				
Ser	Leu	Ser	Ser	Leu	Leu	Ala	Asn	Asn	Ala	Val	Thr	Asn	Pro	Pro	Thr
545					550					555					560
Asn	Pro	Pro	Ala	Gln	Asp	Ser	His	Pro	Ala	Val	Ile	Gly	Ser	Thr	Thr
			565						570					575	
Ala	Gly	Ser	Val	Thr	Ile	Ser	Gly	Pro	Ile	Phe	Phe	Glu	Asp	Leu	Asp
			580												

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Ile Arg Ser Ala His Ser Ala Ile Gln Ala Ser Val Asp Gly Arg Ser
690                      695                      700
Tyr Cys Arg Gly Leu Trp Val Ser Gly Val Ser Asn Phe Phe Tyr His
705                      710                      715                      720
Asp Arg Asp Ala Leu Gly Gln Gly Tyr Arg Tyr Ile Ser Gly Gly Tyr
725                      730                      735
Ser Leu Gly Ala Asn Ser Tyr Phe Gly Ser Ser Met Phe Gly Leu Ala
740                      745                      750
Phe Thr Glu Val Phe Gly Arg Ser Lys Asp Tyr Val Val Cys Arg Ser
755                      760                      765
Asn His His Ala Cys Ile Gly Ser Val Tyr Leu Ser Thr Gln Gln Ala
770                      775                      780
Leu Cys Gly Ser Tyr Leu Phe Gly Asp Ala Phe Ile Arg Ala Ser Tyr
785                      790                      795                      800
Gly Phe Gly Asn Gln His Met Lys Thr Ser Tyr Thr Phe Ala Glu Glu
805                      810                      815
Ser Asp Val Arg Trp Asp Asn Asn Cys Leu Ala Gly Glu Ile Gly Ala
820                      825                      830
Gly Leu Pro Ile Val Ile Thr Pro Ser Lys Leu Tyr Leu Asn Glu Leu
835                      840                      845
Arg Pro Phe Val Gln Ala Glu Phe Ser Tyr Ala Asp His Glu Ser Phe
850                      855                      860
Thr Glu Glu Gly Asp Gln Ala Arg Ala Phe Lys Ser Gly His Leu Leu
865                      870                      875                      880
Asn Leu Ser Val Pro Val Gly Val Lys Phe Asp Arg Cys Ser Ser Thr
885                      890                      895
His Pro Asn Lys Tyr Ser Phe Met Ala Ala Tyr Ile Cys Asp Ala Tyr
900                      905                      910
Arg Thr Ile Ser Gly Thr Glu Thr Thr Leu Leu Ser His Gln Glu Thr
915                      920                      925
Trp Thr Thr Asp Ala Phe His Leu Ala Arg His Gly Val Val Val Arg
930                      935                      940
Gly Ser Met Tyr Ala Ser Leu Thr Ser Asn Ile Glu Val Tyr Gly His
945                      950                      955                      960
Gly Arg Tyr Glu Tyr Arg Asp Ala Ser Arg Gly Tyr Gly Leu Ser Ala
965                      970                      975
Gly Ser Lys Val Xaa Phe
980

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<210> 177
<211> 964
<212> PRT
<213> Chlamydia

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<400> 177
Met Lys Lys Ala Phe Phe Phe Phe Leu Ile Gly Asn Ser Leu Ser Gly
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Leu Ala Arg Glu Val Pro Ser Arg Ile Phe Leu Met Pro Asn Ser Val
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Pro Asp Pro Thr Lys Glu Ser Leu Ser Asn Lys Ile Ser Leu Thr Gly
35     40     45
Asp Thr His Asn Leu Thr Asn Cys Tyr Leu Asp Asn Leu Arg Tyr Ile
50     55     60
Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala Ala Val Thr Ile
65     70     75     80
Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu Gly Ile Tyr Phe
85     90     95

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Ala	Lys	Asn	Leu	Thr	Pro	Glu	Ser	Gly	Gly	Ala	Ile	Gly	Tyr	Ala	Ser
			100					105				110			
Pro	Asn	Ser	Pro	Thr	Val	Glu	Ile	Arg	Asp	Thr	Ile	Gly	Pro	Val	Ile
		115					120					125			
Phe	Glu	Asn	Asn	Thr	Cys	Cys	Arg	Leu	Phe	Thr	Trp	Arg	Asn	Pro	Tyr
	130					135					140				
Ala	Ala	Asp	Lys	Ile	Arg	Glu	Gly	Gly	Ala	Ile	His	Ala	Gln	Asn	Leu
145					150					155					160
Tyr	Ile	Asn	His	Asn	His	Asp	Val	Val	Gly	Phe	Met	Lys	Asn	Phe	Ser
			165						170					175	
Tyr	Val	Gln	Gly	Gly	Ala	Ile	Ser	Thr	Ala	Asn	Thr	Phe	Val	Val	Ser
			180					185					190		
Glu	Asn	Gln	Ser	Cys	Phe	Leu	Phe	Met	Asp	Asn	Ile	Cys	Ile	Gln	Thr
		195					200					205			
Asn	Thr	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Gly	Thr	Ser	Asn	Ser
	210					215					220				
Phe	Glu	Ser	Asn	Asn	Cys	Asp	Leu	Phe	Phe	Ile	Asn	Asn	Ala	Cys	Cys
225					230					235					240
Ala	Gly	Gly	Ala	Ile	Phe	Ser	Pro	Ile	Cys	Ser	Leu	Thr	Gly	Asn	Arg
			245						250					255	
Gly	Asn	Ile	Val	Phe	Tyr	Asn	Asn	Arg	Cys	Phe	Lys	Asn	Val	Glu	Thr
			260					265					270		
Ala	Ser	Ser	Glu	Ala	Ser	Asp	Gly	Gly	Ala	Ile	Lys	Val	Thr	Thr	Arg
		275					280					285			
Leu	Asp	Val	Thr	Gly	Asn	Arg	Gly	Arg	Ile	Phe	Phe	Ser	Asp	Asn	Ile
	290					295					300				
Thr	Lys	Asn	Tyr	Gly	Gly	Ala	Ile	Tyr	Ala	Pro	Val	Val	Thr	Leu	Val
305					310					315					320
Asp	Asn	Gly	Pro	Thr	Tyr	Phe	Ile	Asn	Asn	Ile	Ala	Asn	Asn	Lys	Gly
				325					330					335	
Gly	Ala	Ile	Tyr	Ile	Asp	Gly	Thr	Ser	Asn	Ser	Lys	Ile	Ser	Ala	Asp
			340					345					350		
Arg	His	Ala	Ile	Ile	Phe	Asn	Glu	Asn	Ile	Val	Thr	Asn	Val	Thr	Asn
		355					360					365			
Ala	Asn	Gly	Thr	Ser	Thr	Ser	Ala	Asn	Pro	Pro	Arg	Arg	Asn	Ala	Ile
	370					375					380				
Thr	Val	Ala	Ser	Ser	Ser	Gly	Glu	Ile	Leu	Leu	Gly	Ala	Gly	Ser	Ser
385					390					395					400
Gln	Asn	Leu	Ile	Phe	Tyr	Asp	Pro	Ile	Glu	Val	Ser	Asn	Ala	Gly	Val
			405						410					415	
Ser	Val	Ser	Phe	Asn	Lys	Glu	Ala	Asp	Gln	Thr	Gly	Ser	Val	Val	Phe
			420					425					430		
Ser	Gly	Ala	Thr	Val	Asn	Ser	Ala	Asp	Phe	His	Gln	Arg	Asn	Leu	Gln
	435						440					445			
Thr	Lys	Thr	Pro	Ala	Pro	Leu	Thr	Leu	Ser	Asn	Gly	Phe	Leu	Cys	Ile
	450					455					460				
Glu	Asp	His	Ala	Gln	Leu	Thr	Val	Asn	Arg	Phe	Thr	Gln	Thr	Gly	Gly
465					470					475					480
Val	Val	Ser	Leu	Gly	Asn	Gly	Ala	Val	Leu	Ser	Cys	Tyr	Lys	Asn	Gly
			485						490					495	
Thr	Gly	Asp	Ser	Ala	Ser	Asn	Ala	Ser	Ile	Thr	Leu	Lys	His	Ile	Gly
			500					505					510		
Leu	Asn	Leu	Ser	Ser	Ile	Leu	Lys	Ser	Gly	Ala	Glu	Ile	Pro	Leu	Leu
		515					520					525			
Trp	Val	Glu	Pro	Thr	Asn	Asn	Ser	Asn	Asn	Tyr	Thr	Ala	Asp	Thr	Ala
	530					535					540				
Ala	Thr	Phe	Ser	Leu	Ser	Asp	Val	Lys	Leu	Ser	Leu	Ile	Asp	Asp	Tyr

<210>	178
<211>	1530
<212>	PRT

<400> 178

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Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser 40	Val	Asn	Glu	Leu	Val	Tyr	Val
Gly	Pro 50	Gln	Ala	Val	Leu	Leu	Leu	Asp 55	Gln	Ile	Arg 60	Asp	Leu	Phe	Val
Gly 65	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr 75	Arg	Leu	Ile	Val	Gly 80
Asp	Pro	Ser	Ser	Phe 85	Gln	Glu	Lys	Asp 90	Ala	Asp	Thr	Leu	Pro	Gly 95	Lys
Val	Glu	Gln	Ser	Thr 100	Leu	Phe	Ser	Val 105	Thr	Asn	Pro	Val	Val	Phe	Gln
Gly	Val	Asp 115	Gln	Gln	Asp	Gln	Val	Ser 120	Ser	Gln	Gly	Leu	Ile	Cys	Ser
Phe	Thr 130	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly 140	Glu	Ser	Phe	Leu
Gly 145	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala 155	Gly	Ile	Thr	Leu	Thr 160
Asp	Val	Lys	Ala	Ser 165	Leu	Ser	Gly	Ala 170	Ala	Leu	Tyr	Ser	Thr	Glu 175	Asp
Leu	Ile	Phe	Glu	Lys 180	Ile	Lys	Gly	Gly 185	Leu	Glu	Phe	Ala	Ser	Cys	Ser
Ser	Leu	Glu 195	Gln	Gly	Gly	Ala	Cys 200	Ala	Ala	Gln	Ser	Ile 205	Leu	Ile	His
Asp	Cys 210	Gln	Gly	Leu	Gln	Val	Lys 215	His	Cys	Thr	Thr 220	Ala	Val	Asn	Ala
Glu 225	Gly	Ser	Ser	Ala	Asn 230	Asp	His	Leu	Gly	Phe 235	Gly	Gly	Gly	Ala	Phe 240
Phe	Val	Thr	Gly	Ser 245	Leu	Ser	Gly	Glu	Lys 250	Ser	Leu	Tyr	Met	Pro 255	Ala
Gly	Asp	Met	Val	Val 260	Ala	Asn	Cys	Asp 265	Gly	Ala	Ile	Ser	Phe	Glu 270	Gly
Asn	Ser	Ala 275	Asn	Phe	Ala	Asn	Gly 280	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys
Val	Leu 290	Phe	Val	Ala	Asn 295	Asp	Lys	Lys	Thr	Ser	Phe 300	Ile	Glu	Asn	Arg
Ala 305	Leu	Ser	Gly	Gly	Ala 310	Ile	Ala	Ala	Ser	Ser	Asp	Ile	Ala	Phe	Gln 320
Asn	Cys	Ala	Glu	Leu 325	Val	Phe	Lys	Gly	Asn 330	Cys	Ala	Ile	Gly	Thr 335	Glu
Asp	Lys	Gly	Ser	Leu 340	Gly	Gly	Gly	Ala 345	Ile	Ser	Ser	Leu	Gly	Thr 350	Val
Leu	Leu	Gln 355	Gly	Asn	His	Gly	Ile 360	Thr	Cys	Asp	Lys	Asn 365	Glu	Ser	Ala
Ser	Gln 370	Gly	Gly	Ala	Ile	Phe 375	Gly	Lys	Asn	Cys	Gln 380	Ile	Ser	Asp	Asn
Glu 385	Gly	Pro	Val	Val	Phe 390	Arg	Asp	Ser	Thr	Ala 395	Cys	Leu	Gly	Gly	Gly 400
Ala	Ile	Ala	Ala	Gln 405	Glu	Ile	Val	Ser	Ile 410	Gln	Asn	Asn	Gln	Ala 415	Gly
Ile	Ser	Phe	Glu 420	Gly	Gly	Lys	Ala 425	Ser	Phe	Gly	Gly	Gly	Ile	Ala	Cys

Gly	Ser	Phe	Ser	Ser	Ala	Gly	Gly	Ala	Ser	Val	Leu	Gly	Thr	Ile	Asp	
		435					440					445				
Ile	Ser	Lys	Asn	Leu	Gly	Ala	Ile	Ser	Phe	Ser	Arg	Thr	Leu	Cys	Thr	
	450					455					460					
Thr	Ser	Asp	Leu	Gly	Gln	Met	Glu	Tyr	Gln	Gly	Gly	Gly	Ala	Leu	Phe	
465					470					475					480	
Gly	Glu	Asn	Ile	Ser	Leu	Ser	Glu	Asn	Ala	Gly	Val	Leu	Thr	Phe	Lys	
				485					490					495		
Asp	Asn	Ile	Val	Lys	Thr	Phe	Ala	Ser	Asn	Gly	Lys	Ile	Leu	Gly	Gly	
			500					505					510			
Gly	Ala	Ile	Leu	Ala	Thr	Gly	Lys	Val	Glu	Ile	Thr	Asn	Asn	Ser	Gly	
		515					520					525				
Gly	Ile	Ser	Phe	Thr	Gly	Asn	Ala	Arg	Ala	Pro	Gln	Ala	Leu	Pro	Thr	
	530					535					540					
Gln	Glu	Glu	Phe	Pro	Leu	Phe	Ser	Lys	Lys	Glu	Gly	Arg	Pro	Leu	Ser	
545					550					555					560	
Ser	Gly	Tyr	Ser	Gly	Gly	Gly	Ala	Ile	Leu	Gly	Arg	Glu	Val	Ala	Ile	
				565					570					575		
Leu	His	Asn	Ala	Ala	Val	Val	Phe	Glu	Gln	Asn	Arg	Leu	Gln	Cys	Ser	
			580					585					590			
Glu	Glu	Glu	Ala	Thr	Leu	Leu	Gly	Cys	Cys	Gly	Gly	Gly	Ala	Val	His	
		595					600					605				
Gly	Met	Asp	Ser	Thr	Ser	Ile	Val	Gly	Asn	Ser	Ser	Val	Arg	Phe	Gly	
	610					615					620					
Asn	Asn	Tyr	Ala	Met	Gly	Gln	Gly	Val	Ser	Gly	Gly	Ala	Leu	Leu	Ser	
625					630					635					640	
Lys	Thr	Val	Gln	Leu	Ala	Gly	Asn	Gly	Ser	Val	Asp	Phe	Ser	Arg	Asn	
				645					650					655		
Ile	Ala	Ser	Leu	Gly	Gly	Gly	Ala	Leu	Gln	Ala	Ser	Glu	Gly	Asn	Cys	
			660					665					670			
Glu	Leu	Val	Asp	Asn	Gly	Tyr	Val	Leu	Phe	Arg	Asp	Asn	Arg	Gly	Arg	
		675					680					685				
Val	Tyr	Gly	Gly	Ala	Ile	Ser	Cys	Leu	Arg	Gly	Asp	Val	Val	Ile	Ser	
	690					695					700					
Gly	Asn	Lys	Gly	Arg	Val	Glu	Phe	Lys	Asp	Asn	Ile	Ala	Thr	Arg	Leu	
705					710					715					720	
Tyr	Val	Glu	Glu	Thr	Val	Glu	Lys	Val	Glu	Glu	Val	Glu	Pro	Ala	Pro	
				725						730				735		
Glu	Gln	Lys	Asp	Asn	Asn	Glu	Leu	Ser	Phe	Leu	Gly	Ser	Val	Glu	Gln	
			740					745					750			
Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly	
		755					760					765				
Asp	Leu	Ser	Pro	Glu	Ser	Ser	Ile	Ser	Ser	Glu	Glu	Leu	Ala	Lys	Arg	
	770					775					780					
Arg	Glu	Cys	Ala	Gly	Gly	Ala	Ile	Phe	Ala	Lys	Arg	Val	Arg	Ile	Val	
785					790					795					800	
Asp	Asn	Gln	Glu	Ala	Val	Val	Phe	Ser	Asn	Asn	Phe	Ser	Asp	Ile	Tyr	
				805					810					815		
Gly	Gly	Ala	Ile	Phe	Thr	Gly	Ser	Leu	Arg	Glu	Glu	Asp	Lys	Leu	Asp	
			820					825					830			
Gly	Gln	Ile	Pro	Glu	Val	Leu	Ile	Ser	Gly	Asn	Ala	Gly	Asp	Val	Val	
		835					840					845				
Phe	Ser	Gly	Asn	Ser	Ser	Lys	Arg	Asp	Glu	His	Leu	Pro	His	Thr	Gly	
	850					855					860					
Gly	Gly	Ala	Ile	Cys	Thr	Gln	Asn	Leu	Thr	Ile	Ser	Gln	Asn	Thr	Gly	
865					870					875					880	
Asn	Val	Leu	Phe	Tyr	Asn	Asn	Val	Ala	Cys	Ser	Gly	Gly	Ala	Val	Arg	

Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu	Ala	Phe	Gly	Gly	Asp	Ile
			900					905					910		
Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala	Gln	Gly	Ser	Asp	Ala	Ile
		915					920					925			
Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr	Ala	Leu	Asn	Ala	Thr	Glu
		930					935				940				
Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu	Val	Phe	Glu	Asn	Leu	Lys
945					950					955					960
Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile	Asn	Ser	Arg	Glu	Asn	Pro
			965					970						975	
Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu	Ala	Glu	Ser	Lys	Val	Pro
			980					985					990		
Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu	Glu	Leu	Leu	Asn	Gly	Ala
			995				1000					1005			
Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp	Ala	Gly	Ala	Lys	Leu	Val
	1010					1015					1020				
Leu	Ala	Ala	Gly	Ser	Lys	Leu	Lys	Ile	Leu	Asp	Ser	Gly	Thr	Pro	Val
1025					1030					1035					1040
Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala	Glu	Ile	Glu	Ser	Ser	Ser
			1045						1050					1055	
Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile	Ala	Lys	Asn	Ala	Gln	Thr
			1060					1065					1070		
Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile	Ser	Val	Asp	Leu	Ala	Ser
		1075				1080						1085			
Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val	Glu	Ala	Pro	Gln	Val	Ile
	1090					1095					1100				
Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly	Glu	Leu	Asn	Leu	Glu	Leu
1105					1110					1115					1120
Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn	His	Ala	Leu	Leu	Lys	Asn
			1125						1130					1135	
Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val	Ala	Ser	Ser	Asp	Glu	Ala
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Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser	Ala	Leu	Lys	Asn	Ala	Arg
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Phe	Ala	His	Asn	Leu	Thr	Ala	Gln	Arg	Met	Glu	Phe	Asp	Tyr	Ser	Thr
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 Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser Leu
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 Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile Thr
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 Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr Arg
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 Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His Leu
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 Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser Ser
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 Gly Glu Thr Asp Lys Lys Thr Glu Glu Leu Asp Asn Gly Gly Ile
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 Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly Glu
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 Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly Ala
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 Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu Leu
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 Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala Lys
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Gln	Asn	Pro	Ala	Leu	Arg	Ser	Asp	Gln	Gln	Ile	Ser	Leu	Leu	Val	Leu	
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Pro	Thr	Asp	Ser	Ser	Lys	Met	Gln	Ala	Gln	Lys	Ile	Val	Leu	Thr	Gly	
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His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu	
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Lys	Gly	Asp	Leu	Thr	Ile	Ala	Asp	Ser	Gln	Glu	Val	Leu	Phe	Ser	Ile	
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Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gly	Asp	Leu	Ser	Ile	Gln	Ser	
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Pro	Val	Thr	Ala	Lys	Gly	Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	
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Ile	Thr	Asn	Ile	Thr	Gly	Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	
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Ser	His	Arg	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	
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Lys	Glu	Thr	Gln	Asp	Pro	Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr		
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Val	Val	Asp	Thr	Thr	Ile	Ser	Lys	Asn	Thr	Ala	Lys	Lys	Gly	Gly	Gly		
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Ile	Tyr	Ala	Lys	Lys	Ala	Lys	Met	Ser	Arg	Ile	Asp	Gln	Leu	Asn	Ile		
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 755 760 765
 Leu Pro Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr
 770 775 780
 Tyr Tyr Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val
 785 790 795 800
 Glu Ser Gly Pro Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala
 805 810 815
 Pro Met Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn
 820 825 830
 Gln Arg Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val
 835 840 845
 Leu Arg Gly Gln Ser His Ser Tyr Ser Leu Asp Leu Gly Thr Thr Tyr
 850 855 860
 Arg Phe
 865

<210> 190
 <211> 1006
 <212> PRT
 <213> Chlamydia

<400> 190
 Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Asp Ser Ser Leu
 1 5 10 15
 Val Pro His His His His His His Met Ile Pro Gln Gly Ile Tyr Asp
 20 25 30
 Gly Glu Thr Leu Thr Val Ser Phe Pro Tyr Thr Val Ile Gly Asp Pro
 35 40 45
 Ser Gly Thr Thr Val Phe Ser Ala Gly Glu Leu Thr Leu Lys Asn Leu
 50 55 60
 Asp Asn Ser Ile Ala Ala Leu Pro Leu Ser Cys Phe Gly Asn Leu Leu
 65 70 75 80
 Gly Ser Phe Thr Val Leu Gly Arg Gly His Ser Leu Thr Phe Glu Asn
 85 90 95
 Ile Arg Thr Ser Thr Asn Gly Ala Ala Leu Ser Asn Ser Ala Ala Asp
 100 105 110
 Gly Leu Phe Thr Ile Glu Gly Phe Lys Glu Leu Ser Phe Ser Asn Cys
 115 120 125
 Asn Ser Leu Leu Ala Val Leu Pro Ala Ala Thr Thr Asn Lys Gly Ser
 130 135 140

Gln	Thr	Pro	Thr	Thr	Thr	Ser	Thr	Pro	Ser	Asn	Gly	Thr	Ile	Tyr	Ser
145					150					155					160
Lys	Thr	Asp	Leu	Leu	Leu	Leu	Asn	Asn	Glu	Lys	Phe	Ser	Phe	Tyr	Ser
			165						170					175	
Asn	Leu	Val	Ser	Gly	Asp	Gly	Gly	Ala	Ile	Asp	Ala	Lys	Ser	Leu	Thr
			180					185					190		
Val	Gln	Gly	Ile	Ser	Lys	Leu	Cys	Val	Phe	Gln	Glu	Asn	Thr	Ala	Gln
		195					200					205			
Ala	Asp	Gly	Gly	Ala	Cys	Gln	Val	Val	Thr	Ser	Phe	Ser	Ala	Met	Ala
	210					215					220				
Asn	Glu	Ala	Pro	Ile	Ala	Phe	Val	Ala	Asn	Val	Ala	Gly	Val	Arg	Gly
225					230					235					240
Gly	Gly	Ile	Ala	Ala	Val	Gln	Asp	Gly	Gln	Gln	Gly	Val	Ser	Ser	Ser
			245						250					255	
Thr	Ser	Thr	Glu	Asp	Pro	Val	Val	Ser	Phe	Ser	Arg	Asn	Thr	Ala	Val
			260					265					270		
Glu	Phe	Asp	Gly	Asn	Val	Ala	Arg	Val	Gly	Gly	Gly	Ile	Tyr	Ser	Tyr
		275				280						285			
Gly	Asn	Val	Ala	Phe	Leu	Asn	Asn	Gly	Lys	Thr	Leu	Phe	Leu	Asn	Asn
	290					295					300				
Val	Ala	Ser	Pro	Val	Tyr	Ile	Ala	Ala	Lys	Gln	Pro	Thr	Ser	Gly	Gln
305					310					315					320
Ala	Ser	Asn	Thr	Ser	Asn	Asn	Tyr	Gly	Asp	Gly	Gly	Ala	Ile	Phe	Cys
			325						330					335	
Lys	Asn	Gly	Ala	Gln	Ala	Gly	Ser	Asn	Asn	Ser	Gly	Ser	Val	Ser	Phe
			340					345					350		
Asp	Gly	Glu	Gly	Val	Val	Phe	Phe	Ser	Ser	Asn	Val	Ala	Ala	Gly	Lys
		355					360					365			
Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Lys	Leu	Ser	Val	Ala	Asn	Cys	Gly	Pro
	370					375					380				
Val	Gln	Phe	Leu	Arg	Asn	Ile	Ala	Asn	Asp	Gly	Gly	Ala	Ile	Tyr	Leu
385					390					395					400
Gly	Glu	Ser	Gly	Glu	Leu	Ser	Leu	Ser	Ala	Asp	Tyr	Gly	Asp	Ile	Ile
			405						410					415	
Phe	Asp	Gly	Asn	Leu	Lys	Arg	Thr	Ala	Lys	Glu	Asn	Ala	Ala	Asp	Val
			420					425					430		
Asn	Gly	Val	Thr	Val	Ser	Ser	Gln	Ala	Ile	Ser	Met	Gly	Ser	Gly	Gly
	435						440					445			
Lys	Ile	Thr	Thr	Leu	Arg	Ala	Lys	Ala	Gly	His	Gln	Ile	Leu	Phe	Asn
	450					455					460				
Asp	Pro	Ile	Glu	Met	Ala	Asn	Gly	Asn	Asn	Gln	Pro	Ala	Gln	Ser	Ser
465					470					475					480
Lys	Leu	Leu	Lys	Ile	Asn	Asp	Gly	Glu	Gly	Tyr	Thr	Gly	Asp	Ile	Val
			485						490					495	
Phe	Ala	Asn	Gly	Ser	Ser	Thr	Leu	Tyr	Gln	Asn	Val	Thr	Ile	Glu	Gln
			500					505					510		
Gly	Arg	Ile	Val	Leu	Arg	Glu	Lys	Ala	Lys	Leu	Ser	Val	Asn	Ser	Leu
		515					520					525			
Ser	Gln	Thr	Gly	Gly	Ser	Leu	Tyr	Met	Glu	Ala	Gly	Ser	Thr	Leu	Asp
	530					535					540				
Phe	Val	Thr	Pro	Gln	Pro	Pro	Gln	Gln	Pro	Pro	Ala	Ala	Asn	Gln	Leu
545					550					555					560
Ile	Thr	Leu	Ser	Asn	Leu	His	Leu	Ser	Leu	Ser	Ser	Leu	Leu	Ala	Asn
			565						570					575	
Asn	Ala	Val	Thr	Asn	Pro	Pro	Thr	Asn	Pro	Pro	Ala	Gln	Asp	Ser	His
			580					585					590		
Pro	Ala	Val	Ile	Gly	Ser	Thr	Thr	Ala	Gly	Ser	Val	Thr	Ile	Ser	Gly

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<210> 191
<211> 977
<212> PRT
<213> Chlamydia
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<400> 191

Met	Ala	Ser	Met	Thr	Gly	Gly	Gln	Gln	Met	Gly	Arg	Asp	Ser	Ser	Leu
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Val	Pro	Ser	Ser	Asp	Pro	His	His	His	His	His	His	Gly	Leu	Ala	Arg
			20					25					30		
Glu	Val	Pro	Ser	Arg	Ile	Phe	Leu	Met	Pro	Asn	Ser	Val	Pro	Asp	Pro
		35					40					45			
Thr	Lys	Glu	Ser	Leu	Ser	Asn	Lys	Ile	Ser	Leu	Thr	Gly	Asp	Thr	His
	50					55					60				
Asn	Leu	Thr	Asn	Cys	Tyr	Leu	Asp	Asn	Leu	Arg	Tyr	Ile	Leu	Ala	Ile
65				70						75					80
Leu	Gln	Lys	Thr	Pro	Asn	Glu	Gly	Ala	Ala	Val	Thr	Ile	Thr	Asp	Tyr
			85						90					95	
Leu	Ser	Phe	Phe	Asp	Thr	Gln	Lys	Glu	Gly	Ile	Tyr	Phe	Ala	Lys	Asn
			100					105					110		
Leu	Thr	Pro	Glu	Ser	Gly	Gly	Ala	Ile	Gly	Tyr	Ala	Ser	Pro	Asn	Ser
		115					120					125			
Pro	Thr	Val	Glu	Ile	Arg	Asp	Thr	Ile	Gly	Pro	Val	Ile	Phe	Glu	Asn
		130				135					140				
Asn	Thr	Cys	Cys	Arg	Leu	Phe	Thr	Trp	Arg	Asn	Pro	Tyr	Ala	Ala	Asp
145					150					155					160
Lys	Ile	Arg	Glu	Gly	Ala	Ile	His	Ala	Gln	Asn	Leu	Tyr	Ile	Asn	
				165					170					175	
His	Asn	His	Asp	Val	Val	Gly	Phe	Met	Lys	Asn	Phe	Ser	Tyr	Val	Gln
			180					185					190		
Gly	Gly	Ala	Ile	Ser	Thr	Ala	Asn	Thr	Phe	Val	Val	Ser	Glu	Asn	Gln
		195					200					205			
Ser	Cys	Phe	Leu	Phe	Met	Asp	Asn	Ile	Cys	Ile	Gln	Thr	Asn	Thr	Ala
	210					215					220				
Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Gly	Thr	Ser	Asn	Ser	Phe	Glu	Ser
225					230					235					240
Asn	Asn	Cys	Asp	Leu	Phe	Phe	Ile	Asn	Asn	Ala	Cys	Cys	Ala	Gly	Gly
				245					250					255	
Ala	Ile	Phe	Ser	Pro	Ile	Cys	Ser	Leu	Thr	Gly	Asn	Arg	Gly	Asn	Ile
			260					265					270		
Val	Phe	Tyr	Asn	Asn	Arg	Cys	Phe	Lys	Asn	Val	Glu	Thr	Ala	Ser	Ser
		275					280					285			
Glu	Ala	Ser	Asp	Gly	Gly	Ala	Ile	Lys	Val	Thr	Thr	Arg	Leu	Asp	Val
		290				295					300				
Thr	Gly	Asn	Arg	Gly	Arg	Ile	Phe	Phe	Ser	Asp	Asn	Ile	Thr	Lys	Asn
305					310					315					320
Tyr	Gly	Gly	Ala	Ile	Tyr	Ala	Pro	Val	Val	Thr	Leu	Val	Asp	Asn	Gly
			325						330					335	
Pro	Thr	Tyr	Phe	Ile	Asn	Asn	Ile	Ala	Asn	Asn	Lys	Gly	Gly	Ala	Ile
			340					345					350		
Tyr	Ile	Asp	Gly	Thr	Ser	Asn	Ser	Lys	Ile	Ser	Ala	Asp	Arg	His	Ala
		355					360					365			
Ile	Ile	Phe	Asn	Glu	Asn	Ile	Val	Thr	Asn	Val	Thr	Asn	Ala	Asn	Gly
		370				375					380				
Thr	Ser	Thr	Ser	Ala	Asn	Pro	Pro	Arg	Arg	Asn	Ala	Ile	Thr	Val	Ala
385					390					395					400
Ser	Ser	Ser	Gly	Glu	Ile	Leu	Leu	Gly	Ala	Gly	Ser	Ser	Gln	Asn	Leu
			405						410					415	
Ile	Phe	Tyr	Asp	Pro	Ile	Glu	Val	Ser	Asn	Ala	Gly	Val	Ser	Val	Ser
			420					425					430		
Phe	Asn	Lys	Glu	Ala	Asp	Gln	Thr	Gly	Ser	Val	Val	Phe	Ser	Gly	Ala
		435					440					445			

Thr Val Asn Ser Ala Asp Phe His Gln Arg Asn Leu Gln Thr Lys Thr
 450 455 460
 Pro Ala Pro Leu Thr Leu Ser Asn Gly Phe Leu Cys Ile Glu Asp His
 465 470 475 480
 Ala Gln Leu Thr Val Asn Arg Phe Thr Gln Thr Gly Gly Val Val Ser
 485 490 495
 Leu Gly Asn Gly Ala Val Leu Ser Cys Tyr Lys Asn Gly Thr Gly Asp
 500 505 510
 Ser Ala Ser Asn Ala Ser Ile Thr Leu Lys His Ile Gly Leu Asn Leu
 515 520 525
 Ser Ser Ile Leu Lys Ser Gly Ala Glu Ile Pro Leu Leu Trp Val Glu
 530 535 540
 Pro Thr Asn Asn Ser Asn Asn Tyr Thr Ala Asp Thr Ala Ala Thr Phe
 545 550 555 560
 Ser Leu Ser Asp Val Lys Leu Ser Leu Ile Asp Asp Tyr Gly Asn Ser
 565 570 575
 Pro Tyr Glu Ser Thr Asp Leu Thr His Ala Leu Ser Ser Gln Pro Met
 580 585 590
 Leu Ser Ile Ser Glu Ala Ser Asp Asn Gln Leu Gln Ser Glu Asn Ile
 595 600 605
 Asp Phe Ser Gly Leu Asn Val Pro His Tyr Gly Trp Gln Gly Leu Trp
 610 615 620
 Thr Trp Gly Trp Ala Lys Thr Gln Asp Pro Glu Pro Ala Ser Ser Ala
 625 630 635 640
 Thr Ile Thr Asp Pro Gln Lys Ala Asn Arg Phe His Arg Thr Leu Leu
 645 650 655
 Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro Lys His Arg Ser
 660 665 670
 Pro Leu Ile Ala Asn Thr Leu Trp Gly Asn Met Leu Leu Ala Thr Glu
 675 680 685
 Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Gly His Pro Phe Trp
 690 695 700
 Gly Ile Thr Gly Gly Gly Leu Gly Met Met Val Tyr Gln Asp Pro Arg
 705 710 715 720
 Glu Asn His Pro Gly Phe His Met Arg Ser Ser Gly Tyr Ser Ala Gly
 725 730 735
 Met Ile Ala Gly Gln Thr His Thr Phe Ser Leu Lys Phe Ser Gln Thr
 740 745 750
 Tyr Thr Lys Leu Asn Glu Arg Tyr Ala Lys Asn Asn Val Ser Ser Lys
 755 760 765
 Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln Glu Gly Phe
 770 775 780
 Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly Asp His Asn Cys
 785 790 795 800
 His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser Gln Gly Thr Phe
 805 810 815
 Arg Ser Gln Thr Met Gly Gly Ala Val Phe Phe Asp Leu Pro Met Lys
 820 825 830
 Pro Phe Gly Ser Thr His Ile Leu Thr Ala Pro Phe Leu Gly Ala Leu
 835 840 845
 Gly Ile Tyr Ser Ser Leu Ser His Phe Thr Glu Val Gly Ala Tyr Pro
 850 855 860
 Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile Asn Val Leu Val Pro Ile
 865 870 875 880
 Gly Val Lys Gly Ser Phe Met Asn Ala Thr His Arg Pro Gln Ala Trp
 885 890 895
 Thr Val Glu Leu Ala Tyr Gln Pro Val Leu Tyr Arg Gln Glu Pro Gly

900 905 910
 Ile Ala Thr Gln Leu Leu Ala Ser Lys Gly Ile Trp Phe Gly Ser Gly
 915 920 925
 Ser Pro Ser Ser Arg His Ala Met Ser Tyr Lys Ile Ser Gln Gln Thr
 930 935 940
 Gln Pro Leu Ser Trp Leu Thr Leu His Phe Gln Tyr His Gly Phe Tyr
 945 950 955 960
 Ser Ser Ser Thr Phe Cys Asn Tyr Leu Asn Gly Glu Ile Ala Leu Arg
 965 970 975
 Phe

<210> 192
 <211> 848
 <212> PRT
 <213> Chlamydia

<400> 192
 Met Ala Ser His His His His His His Gly Ala Ile Ser Cys Leu Arg
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 Gly Asp Val Val Ile Ser Gly Asn Lys Gly Arg Val Glu Phe Lys Asp
 20 25 30
 Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu Thr Val Glu Lys Val Glu
 35 40 45
 Glu Val Glu Pro Ala Pro Glu Gln Lys Asp Asn Asn Glu Leu Ser Phe
 50 55 60
 Leu Gly Ser Val Glu Gln Ser Phe Ile Thr Ala Ala Asn Gln Ala Leu
 65 70 75 80
 Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro Glu Ser Ser Ile Ser Ser
 85 90 95
 Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala Gly Gly Ala Ile Phe Ala
 100 105 110
 Lys Arg Val Arg Ile Val Asp Asn Gln Glu Ala Val Val Phe Ser Asn
 115 120 125
 Asn Phe Ser Asp Ile Tyr Gly Gly Ala Ile Phe Thr Gly Ser Leu Arg
 130 135 140
 Glu Glu Asp Lys Leu Asp Gly Gln Ile Pro Glu Val Leu Ile Ser Gly
 145 150 155 160
 Asn Ala Gly Asp Val Val Phe Ser Gly Asn Ser Ser Lys Arg Asp Glu
 165 170 175
 His Leu Pro His Thr Gly Gly Gly Ala Ile Cys Thr Gln Asn Leu Thr
 180 185 190
 Ile Ser Gln Asn Thr Gly Asn Val Leu Phe Tyr Asn Asn Val Ala Cys
 195 200 205
 Ser Gly Gly Ala Val Arg Ile Glu Asp His Gly Asn Val Leu Leu Glu
 210 215 220
 Ala Phe Gly Gly Asp Ile Val Phe Lys Gly Asn Ser Ser Phe Arg Ala
 225 230 235 240
 Gln Gly Ser Asp Ala Ile Tyr Phe Ala Gly Lys Glu Ser His Ile Thr
 245 250 255
 Ala Leu Asn Ala Thr Glu Gly His Ala Ile Val Phe His Asp Ala Leu
 260 265 270
 Val Phe Glu Asn Leu Lys Glu Arg Lys Ser Ala Glu Val Leu Leu Ile
 275 280 285
 Asn Ser Arg Glu Asn Pro Gly Tyr Thr Gly Ser Ile Arg Phe Leu Glu
 290 295 300
 Ala Glu Ser Lys Val Pro Gln Cys Ile His Val Gln Gln Gly Ser Leu

Ala Trp Glu Ala Tyr Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu
 770 775 780
 Glu Ala Gly Phe Asp Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln
 785 790 795 800
 Glu Leu Arg Val Ala Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe
 805 810 815
 Ser Thr Val Leu Gly Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr
 820 825 830
 Asp Ser Lys Leu Gly Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
 835 840 845

<210> 193

<211> 778

<212> PRT

<213> Chlamydia

<400> 193

Met His His His His His His Gly Leu Ala Ser Cys Val Asp Leu His
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 Ala Gly Gly Gln Ser Val Asn Glu Leu Val Tyr Val Gly Pro Gln Ala
 20 25 30
 Val Leu Leu Leu Asp Gln Ile Arg Asp Leu Phe Val Gly Ser Lys Asp
 35 40 45
 Ser Gln Ala Glu Gly Gln Tyr Arg Leu Ile Val Gly Asp Pro Ser Ser
 50 55 60
 Phe Gln Glu Lys Asp Ala Asp Thr Leu Pro Gly Lys Val Glu Gln Ser
 65 70 75 80
 Thr Leu Phe Ser Val Thr Asn Pro Val Val Phe Gln Gly Val Asp Gln
 85 90 95
 Gln Asp Gln Val Ser Ser Gln Gly Leu Ile Cys Ser Phe Thr Ser Ser
 100 105 110
 Asn Leu Asp Ser Pro Arg Asp Gly Glu Ser Phe Leu Gly Ile Ala Phe
 115 120 125
 Val Gly Asp Ser Ser Lys Ala Gly Ile Thr Leu Thr Asp Val Lys Ala
 130 135 140
 Ser Leu Ser Gly Ala Ala Leu Tyr Ser Thr Glu Asp Leu Ile Phe Glu
 145 150 155 160
 Lys Ile Lys Gly Gly Leu Glu Phe Ala Ser Cys Ser Ser Leu Glu Gln
 165 170 175
 Gly Gly Ala Cys Ala Ala Gln Ser Ile Leu Ile His Asp Cys Gln Gly
 180 185 190
 Leu Gln Val Lys His Cys Thr Thr Ala Val Asn Ala Glu Gly Ser Ser
 195 200 205
 Ala Asn Asp His Leu Gly Phe Gly Gly Gly Ala Phe Phe Val Thr Gly
 210 215 220
 Ser Leu Ser Gly Glu Lys Ser Leu Tyr Met Pro Ala Gly Asp Met Val
 225 230 235 240
 Val Ala Asn Cys Asp Gly Ala Ile Ser Phe Glu Gly Asn Ser Ala Asn
 245 250 255
 Phe Ala Asn Gly Gly Ala Ile Ala Ala Ser Gly Lys Val Leu Phe Val
 260 265 270
 Ala Asn Asp Lys Lys Thr Ser Phe Ile Glu Asn Arg Ala Leu Ser Gly
 275 280 285
 Gly Ala Ile Ala Ala Ser Ser Asp Ile Ala Phe Gln Asn Cys Ala Glu
 290 295 300
 Leu Val Phe Lys Gly Asn Cys Ala Ile Gly Thr Glu Asp Lys Gly Ser
 305 310 315 320

Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly
 325 330 335
 Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly
 340 345 350
 Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val
 355 360 365
 Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala
 370 375 380
 Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu
 385 390 395 400
 Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser
 405 410 415
 Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn
 420 425 430
 Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu
 435 440 445
 Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe Gly Glu Asn Ile
 450 455 460
 Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val
 465 470 475 480
 Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu
 485 490 495
 Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe
 500 505 510
 Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr Gln Glu Glu Phe
 515 520 525
 Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser
 530 535 540
 Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala
 545 550 555 560
 Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala
 565 570 575
 Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser
 580 585 590
 Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala
 595 600 605
 Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln
 610 615 620
 Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu
 625 630 635 640
 Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp
 645 650 655
 Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly
 660 665 670
 Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly
 675 680 685
 Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu
 690 695 700
 Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp
 705 710 715 720
 Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr
 725 730 735
 Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro
 740 745 750
 Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala
 755 760 765
 Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys

385					390					395					400
Ser	Ser	Leu	Val	Met	Thr	Pro	Gly	Ser	Val	Leu	Ser	Asn	Gln	Thr	Val
				405					410					415	
Ala	Asp	Gly	Ala	Leu	Val	Ile	Asn	Asn	Met	Thr	Ile	Asp	Leu	Ser	Ser
			420					425					430		
Val	Glu	Lys	Asn	Gly	Ile	Ala	Glu	Gly	Asn	Ile	Phe	Thr	Pro	Pro	Glu
		435					440				445				
Leu	Arg	Ile	Ile	Asp	Thr	Thr	Thr	Ser	Gly	Ser	Gly	Gly	Thr	Pro	Ser
	450					455					460				
Thr	Asp	Ser	Glu	Ser	Asn	Gln	Asn	Ser	Asp	Asp	Thr	Lys	Glu	Gln	Asn
465					470				475						480
Asn	Asn	Asp	Ala	Ser	Asn	Gln	Gly	Glu	Ser	Ala	Asn	Gly	Ser	Ser	Ser
			485					490						495	
Pro	Ala	Val	Ala	Ala	Ala	His	Thr	Ser	Arg	Thr	Arg	Asn	Phe	Ala	Ala
			500					505					510		
Ala	Ala	Thr	Ala	Thr	Pro	Thr	Thr	Thr	Pro	Thr	Ala	Thr	Thr	Thr	Thr
		515					520					525			
Ser	Asn	Gln	Val	Ile	Leu	Gly	Gly	Glu	Ile	Lys	Leu	Ile	Asp	Pro	Asn
	530					535					540				
Gly	Thr	Phe	Phe	Gln	Asn	Pro	Ala	Leu	Arg	Ser	Asp	Gln	Gln	Ile	Ser
545					550					555					560
Leu	Leu	Val	Leu	Pro	Thr	Asp	Ser	Ser	Lys	Met	Gln	Ala	Gln	Lys	Ile
				565					570					575	
Val	Leu	Thr	Gly	Asp	Ile	Ala	Pro	Gln	Lys	Gly	Tyr	Thr	Gly	Thr	Leu
			580					585					590		
Thr	Leu	Asp	Pro	Asp	Gln	Leu	Gln	Asn	Gly	Thr	Ile	Ser	Ala	Leu	Trp
		595					600					605			
Lys	Phe	Asp	Ser	Tyr	Arg	Gln	Trp	Ala	Tyr	Val	Pro	Arg	Asp	Asn	His
	610					615					620				
Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly	Ser	Gln	Met	Ser	Met	Val	Thr	Val
625					630					635					640
Lys	Gln	Gly	Leu	Leu	Asn	Asp	Lys	Met	Asn	Leu	Ala	Arg	Phe	Asp	Glu
			645						650					655	
Val	Ser	Tyr	Asn	Asn	Leu	Trp	Ile	Ser	Gly	Leu	Gly	Thr	Met	Leu	Ser
			660					665					670		
Gln	Val	Gly	Thr	Pro	Thr	Ser	Glu	Glu	Phe	Thr	Tyr	Tyr	Ser	Arg	Gly
		675					680					685			
Ala	Ser	Val	Ala	Leu	Asp	Ala	Lys	Pro	Ala	His	Asp	Val	Ile	Val	Gly
		690				695					700				
Ala	Ala	Phe	Ser	Lys	Met	Ile	Gly	Lys	Thr	Lys	Ser	Leu	Lys	Arg	Glu
705					710					715					720
Asn	Asn	Tyr	Thr	His	Lys	Gly	Ser	Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val
				725					730					735	
Tyr	Gly	Gly	Lys	Pro	Phe	His	Phe	Val	Ile	Asn	Lys	Lys	Thr	Glu	Lys
			740					745					750		
Ser	Leu	Pro	Leu	Leu	Leu	Gln	Gly	Val	Ile	Ser	Tyr	Gly	Tyr	Ile	Lys
		755					760					765			
His	Asp	Thr	Val	Thr	His	Tyr	Pro	Thr	Ile	Arg	Glu	Arg	Asn	Gln	Gly
	770					775					780				
Glu	Trp	Glu	Asp	Leu	Gly	Trp	Leu	Thr	Ala	Leu	Arg	Val	Ser	Ser	Val
785					790					795					800
Leu	Arg	Thr	Pro	Ala	Gln	Gly	Asp	Thr	Lys	Arg	Ile	Thr	Val	Tyr	Gly
				805					810					815	
Glu	Leu	Glu	Tyr	Ser	Ser	Ile	Arg	Gln	Lys	Gln	Phe	Thr	Glu	Thr	Glu
			820					825					830		
Tyr	Asp	Pro	Arg	Tyr	Phe	Asp	Asn	Cys	Thr	Tyr	Arg	Asn	Leu	Ala	Ile
		835					840					845			

Ser	Glu	Thr	Lys	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro
290						295					300				
Ser	Pro	Asp	Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys
305					310					315					320
Ser	Leu	Thr	Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn
				325						330				335	
Ile	Ala	Thr	Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser
			340					345					350		
Cys	Thr	Asn	Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln
		355					360					365			
His	Gly	Gly	Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr
	370					375					380				
Thr	Ser	Glu	Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe
385					390					395					400
Ser	Glu	Asn	Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys
				405					410					415	
Leu	Ser	Leu	Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala
			420					425					430		
Lys	Glu	Ser	Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Thr
		435					440					445			
Thr	Asp	Thr	Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser
	450					455					460				
Thr	Pro	Glu	Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser
465					470					475					480
Thr	Ala	Glu	Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln
				485					490					495	
Thr	Asp	Gln	Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser
			500					505					510		
Ile	Glu	Asn	Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys
	515						520					525			
Lys	Gly	Gly	Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn
	530					535					540				
Asn	Leu	Glu	Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu
545					550					555					560
Cys	Leu	Thr	Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser
				565					570					575	
His	Tyr	Asn	Ser	Ala	Ala	Lys	Glu	Gly	Val	Ile	His	Ser	Ser	Lys	Thr
		580						585				590			
Val	Thr	Leu	Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr
		595					600					605			
Val	Lys	Ala	Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro
	610					615					620				
Pro	Val	Glu	Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asn	Pro	Asn	Ser	Asn
625					630					635					640
Thr	Glu	Gly	Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp
				645					650					655	
Thr	Ala	Asp	Thr	Gly	Thr	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr
			660					665					670		
Ser	Asp	Thr	Gly	Asn	Ala	Glu	Ser	Gly	Glu	Gln	Leu	Gln	Asp	Ser	Thr
		675						680					685		
Gln	Ser	Asn	Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln	Ser
	690					695					700				
Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr
705					710					715					720
Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser	Gly	Ser	Ser	Thr	Pro	Gln
				725					730					735	
Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser	Ile


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<213> Chlamydia
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43

<210> 198
<211> 34
<212> DNA
<213> Chlamydia

34

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<212> DNA
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6

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<210> 200
<211> 34
<212> DNA
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 <210> 201
 <211> 38
 <212> DNA
 <213> Chlamydia

 <400> 201
 cagagctagc ttaaaagatc aatcgcaatc cagtattc 38

 <210> 202
 <211> 5
 <212> DNA
 <213> Chlamydia

 <400> 202
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 <210> 203
 <211> 31
 <212> DNA
 <213> Chlamydia

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 <210> 204
 <211> 31
 <212> DNA
 <213> Chlamydia

 <400> 204
 cagaacgcgt ctagaatcgc agagcaattt c 31

 <210> 205
 <211> 30
 <212> DNA
 <213> Chlamydia

 <400> 205
 gtgcaatcat gattcctcaa ggaatttacg 30

 <210> 206
 <211> 31
 <212> DNA
 <213> Chlamydia

 <400> 206
 cagaacgcgt ttagaaccgg actttacttc c 31

 <210> 207
 <211> 50
 <212> DNA
 <213> Chlamydia

 <400> 207

cagacatatg catcaccatc accatcacga ggcgagctcg atccaagatc 50

<210> 208
 <211> 40
 <212> DNA
 <213> Chlamydia

<400> 208
 cagaggtacc tcagatagca ctctctccta ttaaagtagg 40

<210> 209
 <211> 55
 <212> DNA
 <213> Chlamydia

<400> 209
 cagagctagc atgcatcacc atcaccatca cgттаagatt gagaacttct ctggc 55

<210> 210
 <211> 35
 <212> DNA
 <213> Chlamydia

<400> 210
 cagaggtacc ttagaatgtc atacgagcac cgcag 35

<210> 211
 <211> 36
 <212> DNA
 <213> Chlamydia

<400> 211
 cagacatatg catcaccatc accatcacgg gttagc 36

<210> 212
 <211> 35
 <212> DNA
 <213> Chlamydia

<400> 212
 cagaggtacc tcagctcctc cagcacactc tottc 35

<210> 213
 <211> 51
 <212> DNA
 <213> Chlamydia

<400> 213
 cagagctagc catcaccatc accatcacgg tgctatttct tgcttacgtg g 51

<210> 214
 <211> 38
 <212> DNA
 <213> Chlamydia

<400> 214
 cagaggtact taaaagatca atcgcaatcc agtattcg 38

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<210> 215
<211> 48
<212> DNA
<213> Chlamydia
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<400> 215
cagaggatcc acatcaccat caccatcacg gactagctag agagggttc 48

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<210> 216
<211> 31
<212> DNA
<213> Chlamydia
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<400> 216
cagagaattc ctagaatcgc agagcaattt c 31

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<211> 7
<212> DNA
<213> Chlamydia
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<400> 217
tgcaatc
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<210> 218
<211> 22
<212> PRT
<213> Chlamydia
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<400> 218
Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Asp Ser Ser Leu
 1          5          10          15
Val Pro Ser Ser Asp Pro
      20
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<210> 219
<211> 51
<212> DNA
<213> Chlamydia

<400> 219
cagaggtacc gcatcaccat caaccatcaca tgattcctca aggaatttac g 51

<210> 220
<211> 33
<212> DNA
<213> Chlamydia

<400> 220
cagagcggcc gcttagaacc ggactttact tcc 33

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<210> 221
<211> 24
<212> PRT
<213> Chlamydia
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<400> 221

Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu
 1 5 10 15
 Val Pro His His His His His
 20

<210> 222

<211> 46

<212> DNA

<213> Chlamydia

<400> 222

cagagctagc catcaccatc accatcacct ctttggccag gatccc

46

<210> 223

<211> 30

<212> DNA

<213> Chlamydia

<400> 223

cagaactagt ctagaacctg taagtgggtcc

30

<210> 224

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 224

Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile
 1 5 10 15
 Ser Thr Asp Leu
 20

<210> 225

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 225

Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala
 1 5 10 15
 Val Ile Val Gly
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<210> 226

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

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His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly
1          5          10          15
Pro Met Pro Arg
          20

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<213> Artificial Sequence

<223> Made in a lab

Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr
1 5 10 15
Glu Ile Val Lys
20

<213> Artificial Sequence

<223> Made in a lab

Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys
1 5 10 15
Val Trp Glu Tyr
20

<213> Artificial Sequence

<223> Made in a lab

Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile
1 5 10 15
Lys Lys His Asn
20

<213> Artificial Sequence

<223> Made in a lab

<400> 230
 Ile Lys Lys His Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu
 1 5 10 15
 Pro Asp Ala Asn
 20

<210> 231
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 231
 Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
 1 5 10 15
 Leu Ala Lys Val
 20

<210> 232
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 232
 Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe
 1 5 10 15
 Gly Ser Ser Asp
 20

<210> 233
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 233
 Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro
 1 5 10 15
 Ile Asp Met Phe
 20

<210> 234
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 234

Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln
 1 5 10 15
 Met Thr Lys Ala
 20

<210> 235
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 235
 Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala Leu
 1 5 10 15
 Ser Lys His Ile Val Lys
 20

<210> 236
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 236
 Val Glu Ile Thr Gln Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro
 1 5 10 15
 Tyr Pro Val Glu
 20

<210> 237
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 237
 Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile
 1 5 10 15
 Thr Ala Thr Gly
 20

<210> 238
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 238
 Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys

<400> 242
Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg
1 5 10 15

Ser Asp Pro Ala
20

<210> 243
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 243
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala
1 5 10 15
Thr Thr Pro Thr
20

<210> 244
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 244
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala
1 5 10 15
Asp Gly Lys Leu
20

<210> 245
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 245
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val
1 5 10 15
Trp Lys Ile Asp
20

<210> 246
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 246
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
1 5 10 15
Leu Gly Gln Gly

<210> 251
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 251
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 252
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 252
 Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10

<210> 253
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 253
 Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 254
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 254
 Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala
 1 5 10 15
 Phe Gly Val Leu
 20

<210> 255
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Made in a lab

<400> 255

Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn
 1 5 10 15
 Pro Glu Gly Ser
 20

<210> 256

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 256

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
 1 5 10 15
 Ala Leu Arg Ala
 20

<210> 257

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 257

Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr
 1 5 10 15
 Phe Leu Ile Asp
 20

<210> 258

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 258

Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys
 1 5 10 15
 His Gly Val Ile
 20

<210> 259

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 259
 Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg
 1 5 10 15
 His Ala Val Ile
 20

<210> 260
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 260
 Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1 5 10 15
 Asp Leu Pro Leu
 20

<210> 261
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 261
 Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1 5 10 15
 Arg Ser Ile Asp
 20

<210> 262
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 262
 Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1 5 10 15
 Glu Leu Arg Ile
 20

<210> 263
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)

210 215 220
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 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275 280 285
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290 295

<210> 265
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)
 <223> n = A,T,C or G

<400> 265
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 acacagccca acaataaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
 attaaggttg ccaagtctgc tgccgaattg accgcaaata ttttggaca agctggaggc 180
 gcggtctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctcacagcag atcttttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
 atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccattgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcgnaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 266
 <211> 298
 <212> PRT
 <213> Chlamydia

<220>
 <221> VARIANT
 <222> (1)...(298)
 <223> Xaa = Any Amino Acid

<400> 266
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser

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<210> 267
<211> 680
<212> DNA
<213> Chlamydia
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<210> 268
<211> 359
<212> DNA
<213> Chlamydia
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<400> 268

ttatactgat	aagaatcttt	cgattactaa	catcacagga	attatcgaaa	ttgcaaataa	180
caaagcgaca	gatgttggag	gtggtgctta	cgtaaaagga	acccttactt	gtaaaaactc	240
tcaccgtcta	caatttttga	aaaactcttc	cgataaacia	ggtggaggaa	tctacggaga	300
agacaacatc	accctatcta	atttgacagg	gaagactcta	ttccaagaga	atactgccaa	360
aaaagagggc	ggtggactct	tcataaaagg	tacagataaa	gctcttacia	tgacaggact	420
ggatagtttc	tgtttaatta	ataacacatc	agaaaaacat	ggtggtggga	gcctttgtta	480
ccaaagaaat	ctctcagact	tacacctctt	gatgtggaaa	caattccagg	aatcacgcct	540
gtacatggtg	aaacagtcac	tactggcaat	aaatctacag	gaggtaatgg	tgaggggc	598

<210> 273

<211> 126

<212> DNA

<213> Chlamydia

<400> 273

ggatccgaat	tcggcacgag	atgagcotta	tagtttaaca	aaagcttctc	acattccttc	60
gatagctttt	tattagccgt	ttttagcatc	ctaagagat	ctctcgttc	gtaacaaata	120
cgagag						126

<210> 274

<211> 264

<212> DNA

<213> Chlamydia

<400> 274

ggatccgaat	tcggcacgag	ctcttttaaa	tcttaattac	aaaaagacaa	attaattcaa	60
tttttcaaaa	aagaatttaa	acattaattg	ttgtaaaaaa	acaatatatta	ttctaaaata	120
ataaccatag	ttacggggga	atctctttca	tggtttatatt	tagagctcat	caacctaggc	180
atacgcttaa	aacatttcct	ttgaaagttc	accattcgtt	ctccgataag	catcctcaaa	240
ttgctaaagc	tatgtggatt	acgg				264

<210> 275

<211> 359

<212> DNA

<213> Chlamydia

<400> 275

ggatccgaat	tcggcacgag	ataaaacctg	aaccacaaca	aagatctaaa	acttcttgat	60
tttcagctgc	aaattctttt	agataaatat	caaccatttc	ttcagtttca	tatcttggaa	120
ttaaaacttg	ttctcttaaa	ttaattctag	tatttaagta	ttcaacatag	cccattatta	180
attgaattgg	ataattttgc	cttaataatt	cacattcttt	ttcagtaatt	ttaggttcta	240
aaccgtaccg	ctttttttct	aaaattaatg	tttcttcatt	attcatttta	taagccactt	300
tcctttatatt	tttgattttg	ttcttctggt	agtaatgctt	caataatagt	taataattt	359

<210> 276

<211> 357

<212> DNA

<213> Chlamydia

<400> 276

aaaacaattg	atataatttt	ttttttcata	acttccagac	tcctttctag	aaaagtcttt	60
atgggtagta	gtgactctaa	cgttttttat	tattaagacg	atcccoggag	atccttttaa	120
tgatgaaaac	ggaaacatcc	tttcgccaga	aacttttagca	ctattaaaga	atcgttacgg	180
gtagataaag	cctttattca	cccagtatct	tatctatattg	aaatgtctgc	taacactaga	240
tttcgggggaa	tctcttatct	acaaagatcg	aaatctcagc	attattgctg	cgcctcttcc	300
atcttccgct	attcttggac	ttgaaagctt	gtgtttactc	gtgccgaatt	cggatcc	357

<210> 277
 <211> 505
 <212> DNA
 <213> Chlamydia

<400> 277
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 agcactaaaa gagactcctc ttcaagaacg agagtgttaag caggggtgagg aggaacttca 120
 ggtaaaaatc ctaaggccat accaggatgc gacaggaaag agatatctcc attaggagct 180
 cggagacacg ctgggttgtg gccacaagaa tagtattcta gttctcgtgt tgcgtaatga 240
 taacaataaa tgcatagtgt tacaacatc ccagattcag ctgtctgttg atagaagaga 300
 gcagctgttt gttgaacggc ttcttgaata gaggagagct cactcaaaaa ggtatgtaac 360
 atgtttttca ggaataagga gtaggcgcac gcattgactc ctttcccgga agcatcagca 420
 acgattagaa agagttagc ttggggacct tcgcctataa caaagatatc aaagaaatct 480
 ctcctaccg taactgcagg aatat 505

<210> 278
 <211> 407
 <212> DNA
 <213> Chlamydia

<400> 278
 ggatccgaat tccggcacgag aactactgag caaattgggt atccaacttc ctctttacga 60
 aagaaaaaca gaaggcattc tccataccaa gatttggtgc atcgacaata aaactccaat 120
 ctttggtctc gctaactgga gcggtgctgg tatgattaaa aactttgaag acctattcat 180
 ccttcgccca attacagaga cacagcttca ggcttttatg gacgtctggt ctcttctaga 240
 aacaaatagc tcctatctgt cccagagag cgtgcttacg gcccctactc cttcaagtag 300
 acctactcaa caagatacag attctgatga cgaacaaccg agtaccagcc agcaagctat 360
 ccgtatgaga aaataggatt agggaaacaa aacgcacgca aaccaca 407

<210> 279
 <211> 351
 <212> DNA
 <213> Chlamydia

<400> 279
 ctctgtccgc ttacaggagg cttgtatcct ttaaaataga gttttttctta tgaccccatg 60
 tggcgatagg ccgggtctag cgccgatagt agaaatatcg gttgggtttt gtccttgagg 120
 ggatcgtata ctttttcaaa gtatgggtccc cgtatcgatt atctggaggc tcttatgtct 180
 ttttttcata ctagaaaata taagcttatc ctacagaggac tcttgtgttt agcaggctgt 240
 ttcttaaatga acagctgttc ctctagtcca ggaaatcaac ccgctgatga gagcatctat 300
 gtcttgtcta tgaatcgcat gatttgtgat tctcgtgccg aattcggatc c 351

<210> 280
 <211> 522
 <212> DNA
 <213> Chlamydia

<400> 280
 ggatccgaat tccggcacgag cagaggaaaa aggcgatact cctcttgaag atcgtttcac 60
 agaagatctt tccgaagtct ctggagaaga ttttcgagga ttgaaaaatt cgttcgatga 120
 tgattcttct tctgacgaaa ttctcgatgc gctcacaagt aaattttctg atcccacaat 180
 aaaggatcta gctcttgatt atctaattca aatagctccc tctgatggga aacttaagtc 240
 cgctctcatt caggcaaagc atcaactgat gagccagaat cctcaggcga ttgttgagg 300
 acgcaatgtt ctgttagctt cagaaacctt tgcttccaga gcaaatacat ctcttcatc 360
 gcttcgctcc ttatatctcc aagtaacctc atccccctct aattgcgcta atttacatca 420
 aatgcttgct tcttactcgc catcagagaa aaccgctgtt atggagtttc tagtgaatgg 480

catggttagca gattttaaatt cggagggccc ttccattcct cc

522

<210> 281
<211> 577
<212> DNA
<213> Chlamydia

<400> 281
ggatccgaat tccggcacgag atgcttctat tacaattggg ttggatgcgg aaaaagctta 60
ccagcttatt ctagaaaagt tgggagatca aattcttggg ggaattgctg atactattgt 120
tgatagtaca gtccaagata ttttagacaa aatcacacaa gacccttctc taggtttgtt 180
gaaagctttt aacaactttc caatcactaa taaaattcaa tgcaacgggt tattcactcc 240
caggaacatt gaaactttat taggaggaac tgaaatagga aaattcacag tcacacccaa 300
aagctctggg agcatgttct tagtctcagc agatattatt gcatcaagaa tggaaggcgg 360
cgttgttcta gctttgttac gagaagggtga ttctaagccc tacgcgatta gttatggata 420
ctcatcaggc gttcctaatt tatgtagtct aagaaccaga attattaata caggattgac 480
tccgacaacg tattcattac gtgtaggcgg tttagaaagc ggtgtggtat gggttaatgc 540
cctttctaatt ggcaatgata ttttaggaat aacaaat 577

<210> 282
<211> 607
<212> DNA
<213> Chlamydia

<400> 282
actmatcttc cccgggctcg agtgccggccg caagcttgtc gacggagctc gatacaaaaa 60
tgtgtgcgtg tgaaccgctt cttcaaaagc ttgtcttaaa agatattgtc tcgcttccgg 120
attagttaca tgtttaaaaa ttgctagaac aatattattc ccaaccaagc tctctgcggg 180
gctgaaaaaa cctaaattca aaagaatgac tcgccgctca tcttcagaaa gacgatccga 240
cttcataat tcgatgtctt tccccatggg gatctctgta gggagccagt tatttgcgca 300
gccattcaaa taatgttccc aagccattt gtacttaata ggaacaagtt ggttgacatc 360
gacctgggtg cagttcacta gacgcttgcct atttagatta acgctgttct gttttccatc 420
taaaatatct gcttgcataa gaaccgttaa ttttattgtt aatttatatg attaatct 480
gacatgcttc acacccttct tccaaagaac agacaggtgc tttcttcgct ctttcaacaa 540
taattcctgc cgaagcagac ttattcttca tccaacgagg ctgaattcct ctcttattaa 600
tatctac 607

<210> 283
<211> 1077
<212> DNA
<213> Chlamydia

<400> 283
ggatccgaat tccggcacgag aagttaacga tgacgatttg ttcccttggg agagaaggag 60
caatcgaaac taaatgtgcg agagcatgtg aagactccaa tgcaggaata atcccctcat 120
ttctagtaag caggaaaaaa gctcgtaacg cctcttcacg ggtggctaata gtataaaagg 180
ctcgtcctga ctcatgcatt tcggcatgat ctggcccaac tgaaggataa totaatccag 240
cggaaatgga gtgagtttgt aatacttgtc catcgtcatc ttgaagaaga tacgaataaa 300
atccgtggaa tactccaggc cgccctgttg caaaacgtgc tgcattgttt cctgaagaaa 360
tgcccagtc tcccccttcc actccaatta attggacttt tggattcggg ataaaatgat 420
ggaaaaatcc aatagcgttg gagccacctc cgatacatgc aatcagaata tcaggatctc 480
ttcctgcaac tgcattggatt tgctctttca cttcagcgtc tataacagac tgaaaaaatc 540
gaacgatata gggataaggc aaaggctcta aggccgatcc taagcaatag tgagtaaatg 600
agtgtgttgt tgcccaactt tgtagagctt gattaactgc atctttgagt ccacaagatc 660
cttttgttac agaaacgact tcagcaccta aaaagcgcac tttctctaca tttggtttct 720
gtcgttccac atcttttgcct cccatgtata ctacacaatc taatcctaga taagcacacg 780
ctgttgctgt tgctactcca tgttgtcccg cacctgtttc agctacaaca cgtgttttcc 840

caagatat	ttt	agcaagcaaa	cactgaccaa	gagcattatt	cagtttatgt	gctcctgtat	900
gcaaaaagatc	ttcgcgttta	agaaatactc	tagggccatc	aatagctcga	gcaaaattct		960
taacttcagt	cagaggagtt	tgtctccccg	catagttttt	caaaatacaa	tctagttcag		1020
ataaaaaaact	ttgctgagtt	ttgagaatct	cccatccgcg	ttttagattc	tgtatag		1077

<210> 284
 <211> 407
 <212> DNA
 <213> Chlamydia

<400> 284							
ggatccgaat	tcggcacgag	aactactgag	caaattgggt	atccaacttc	ctctttacga		60
aagaaaaaca	gaaggcattc	tccataccaa	gatttggttc	atcgacaata	aaactccaat		120
ctttggctct	gctaactgga	gcggtgctgg	tatgattaaa	aactttgaag	acctattcat		180
ccttcgcccc	attacagaga	cacagcttca	ggcctttatg	gacgtctggg	ctcttctaga		240
aacaaatagc	tcctatctgt	ccccagagag	cgtgcttacg	gcccctactc	cttcaagtag		300
acctactcaa	caagatacag	attctgatga	cgaacaaccg	agtaccagcc	agcaagctat		360
ccgtatgaga	aaataggatt	agggaaacaa	aacgacagca	aaccaca			407

<210> 285
 <211> 802
 <212> DNA
 <213> Chlamydia

<400> 285							
ggatccgaat	tcggcacgag	ttagcttaat	gtctttgtca	tctctaccta	catttgcagc		60
taattctaca	ggcacaattg	gaatcgttaa	tttacgtcgc	tgcctagaag	agtctgctct		120
tgggaaaaaa	gaatctgctg	aattcgaaaa	gatgaaaaac	caattctcta	acagcatggg		180
gaagatggag	gaagaactgt	cttctatcta	ttccaagctc	caagacgacg	attacatgga		240
aggtctatcc	gagaccgcag	ctgccgaatt	aagaaaaaaa	ttcgaagatc	tatctgcaga		300
atacaaacaca	gctcaagggc	agtattacca	aatattaaac	caaagtaatc	tcaagcgcat		360
gcaaaagatt	atggaagaag	tgaaaaaagc	ttctgaaact	gtgcgtattc	aagaaggctt		420
gtcagtcctt	cttaacgaag	atattgtctt	atctatcgat	agttcggcag	ataaaaccga		480
tgctgttatt	aaagttcttg	atgattcttt	tcaaaataat	taacatgcga	agctagccga		540
ggagtgccgt	atgtctcaat	ccacttattc	tottgaacaa	ttagctgatt	ttttgaaagt		600
cgagtttcaa	ggaaatggag	ctactcttct	ttccggaggt	gaagagatcg	aggaagcaaa		660
aacggcacac	atcacattct	tagataatga	aaaatatgct	aaacatttaa	aatcatcgga		720
agctggcgct	atcatcatat	ctcgaacaca	gtttcaaaaa	tatcgagact	tgaataaaaa		780
ctttcttatt	acttctgagt	ct					802

<210> 286
 <211> 588
 <212> DNA
 <213> Chlamydia

<400> 286							
ggatccgaat	tcggcacgag	gcaatattta	ctcccaacat	tacggttcca	aataagcgat		60
aaggtcttct	aataaggaag	ttaatgtaag	aggctttttt	attgcttttc	gtaaggtagt		120
attgcaaccg	cacgcgattg	aatgatacgc	aagccatttc	catcatggaa	aagaaccctt		180
ggacaaaaat	acaaaggagg	ttcactccta	accagaaaaa	gggagagtta	gtttccatgg		240
gttttcctta	tataaccccg	tttcacacaa	ttaggagcgc	cgtctagtat	ttggaataca		300
aattgtcccc	aagcgaattt	tgttctctgt	tcaggggattt	ctcctaattg	ttctgtcagc		360
catccgccta	tggtaacgca	attagctgta	gtaggaagat	caactccaaa	caggtcatag		420
aaatcagaaa	gctcataggt	gcctgcagca	ataacaacat	tcttgtctga	gtgagcgaat		480
tgtttaaaag	atgggcgatt	atgagctacc	tcatacagaga	ctatttttaa	tagatcattt		540
tgggtaaatca	atccttctat	agacccatat	tcatacaatga	taatctctg			588


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gcgatgaagg agatgtatatt gctctggaag caaagggtttc tgaagctaac agaacattgc 240
gtcctccaac aatcgccctga ggattctggc tcatcagttg atgctttgcc tgaatgagag 300
cggacttaag tttcccatca gagggagcta tttgaattag ataatacaaga gctagatcct 360
ttattgtggg atcagaaaat ttacttgtga gcgcacgcag aatttcgtca gaagaagaat 420
catcatcgaa cgaatttttc aatcctcgaa aatcttctcc agagacttcg gaaagatcct 480
ctgtgaaacg atcttcaaga ggagtatcgc ctttttccyc tg 522

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<210> 291
<211> 1002
<212> DNA
<213> Chlamydia

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<400> 291
atggcgacta acgcaattag atcggcagga agtgcagcaa gtaagatgct gctgccagtt 60
gccaaagaac cagcggctgt cagctccttt gctcagaaag ggatttattg tattcaacaa 120
ttttttacaa accctgggaa taagttagca aagttttagat gggcaacaaa aagtttagat 180
aaatgcttta agctaagtaa ggcggtttct gactgtgtcg taggatcgct ggaagaggcg 240
ggatgcacag gggacgcatt gacctccgcg agaaacgcc agggtatgtt aaaaacaact 300
cgagaagttg ttgccttagc taatgtgctc aatggagctg ttccatctat cgtttaactcg 360
actcagaggt gttaccaata cacacgtcaa gccttcgagt taggaagcaa gacaaaagaa 420
agaaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca 480
gcttccaggg aagcttgtac ggcatcggt gcaacgactt actcagcgac attcgggtgt 540
ttacgtccgt taatgttaat caataaactc acagcaaaac cattcttaga caaagcgact 600
gtaggcaatt ttggcacggc tgttgcgtga attatgacca ttaatcatat ggcaggagtt 660
gctggtgctg ttggcggaat cgcattagaa caaaagctgt tcaaactgtc gaaggaatcc 720
ctatacaatg agagatgtgc cttagaaaac caacaatctc agttgagtgg ggacgtgatt 780
ctaagcgcgg aaagggcatt acgtaaagaa cacgttgcta ctctaaaaag aaatgtttta 840
actcttcttg aaaaagcttt agagttggta gtggatggag tcaaactcat tcctttaccg 900
attacagtgg cttgctccgc tgcaatttct ggagccttga cggcagcatc cgcaggaatt 960
ggcttatata gcatatggca gaaaacaaag tctggcaaat aa 1002

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<210> 292
<211> 333
<212> PRT
<213> Chlamydia

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<400> 292
Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met
1 5 10 15
Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln
20 25 30
Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys
35 40 45
Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys
50 55 60
Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala
65 70 75 80
Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met
85 90 95
Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly
100 105 110
Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr
115 120 125
Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro
130 135 140
Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala
145 150 155 160

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Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe
 115 120 125
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu
 145 150 155 160
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser
 165 170 175
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe
 180 185 190
 Gln Thr Met Asp
 195

<210> 295
 <211> 181
 <212> PRT
 <213> Chlamydia

<400> 295
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu
 5 10 15
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser
 20 25 30
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile
 35 40 45
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys
 50 55 60
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile
 65 70 75 80
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser
 85 90 95
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu
 100 105 110
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile
 115 120 125
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu
 130 135 140
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys
 145 150 155 160
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr

165

170

175

Thr Arg Trp Leu Asp
180

<210> 296
<211> 124
<212> PRT
<213> Chlamydia

<400> 296
Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala
5 10 15
Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu
20 25 30
Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro
35 40 45
Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly
50 55 60
Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr
65 70 75 80
Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu
85 90 95
Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn
100 105 110
Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu
115 120

<210> 297
<211> 488
<212> PRT
<213> Chlamydia

<400> 297
Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly
5 10 15
Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu
20 25 30
Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu
35 40 45
Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu
50 55 60
Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp
65 70 75 80

Asp	Leu	Val	Gln	Ser 85	Ser	Val	Ser	Ala	Gln 90	Gln	Lys	Leu	Arg	Thr 95	Gln
Glu	Asn	Pro	Ser 100	Thr	Ser	Phe	Cys	Gln 105	Gln	Val	Leu	Ala	Asp 110	Phe	Ile
Gly	Gly	Leu 115	Asn	Asp	Phe	His	Ala 120	Gly	Val	Thr	Phe	Phe 125	Ala	Ile	Glu
Ser	Ala 130	Tyr	Leu	Pro	Tyr	Thr 135	Val	Gln	Lys	Ser	Ser 140	Asp	Gly	Arg	Phe
Tyr 145	Phe	Val	Asp	Ile	Met 150	Thr	Phe	Ser	Ser	Glu 155	Ile	Arg	Val	Gly	Asp 160
Glu	Leu	Leu	Glu 165	Val	Asp	Gly	Ala	Pro 170	Val	Gln	Asp	Val	Leu	Ala 175	Thr
Leu	Tyr	Gly 180	Ser	Asn	His	Lys	Gly	Thr 185	Ala	Ala	Glu	Glu	Ser 190	Ala	Ala
Leu	Arg	Thr 195	Leu	Phe	Ser	Arg	Met 200	Ala	Ser	Leu	Gly	His 205	Lys	Val	Pro
Ser	Gly 210	Arg	Thr	Thr	Leu	Lys 215	Ile	Arg	Arg	Pro	Phe 220	Gly	Thr	Thr	Arg
Glu 225	Val	Arg	Val	Lys	Trp 230	Arg	Tyr	Val	Pro	Glu 235	Gly	Val	Gly	Asp	Leu 240
Ala	Thr	Ile	Ala 245	Pro	Ser	Ile	Arg	Ala 250	Pro	Gln	Leu	Gln	Lys	Ser 255	Met
Arg	Ser	Phe 260	Phe	Pro	Lys	Lys	Asp 265	Asp	Ala	Phe	His	Arg	Ser 270	Ser	Ser
Leu	Phe 275	Tyr	Ser	Pro	Met	Val	Pro 280	His	Phe	Trp	Ala	Glu 285	Leu	Arg	Asn
His 290	Tyr	Ala	Thr	Ser	Gly	Leu 295	Lys	Ser	Gly	Tyr	Asn 300	Ile	Gly	Ser	Thr
Asp 305	Gly	Phe	Leu	Pro	Val 310	Ile	Gly	Pro	Val	Ile 315	Trp	Glu	Ser	Glu	Gly 320
Leu	Phe	Arg	Ala 325	Tyr	Ile	Ser	Ser	Val	Thr 330	Asp	Gly	Asp	Gly	Lys 335	Ser
His	Lys	Val 340	Gly	Phe	Leu	Arg	Ile	Pro 345	Thr	Tyr	Ser	Trp	Gln 350	Asp	Met
Glu	Asp	Phe 355	Asp	Pro	Ser	Gly	Pro 360	Pro	Pro	Trp	Glu	Glu 365	Phe	Ala	Lys
Ile 370	Ile	Gln	Val	Phe	Ser	Ser 375	Asn	Thr	Glu	Ala	Leu 380	Ile	Ile	Asp	Gln

Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val
130 135 140

<210> 299
 <211> 361
 <212> PRT
 <213> Chlamydia

<400> 299

His	Gln	Glu	Ile	Ala	Asp	Ser	Pro	Leu	Val	Lys	Lys	Ala	Glu	Glu	Gln
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Ile	Asn	Gln	Ala	Gln	Gln	Asp	Ile	Gln	Thr	Ile	Thr	Pro	Ser	Gly	Leu
			20					25					30		
Asp	Ile	Pro	Ile	Val	Gly	Pro	Ser	Gly	Ser	Ala	Ala	Ser	Ala	Gly	Ser
		35					40					45			
Ala	Ala	Gly	Ala	Leu	Lys	Ser	Ser	Asn	Asn	Ser	Gly	Arg	Ile	Ser	Leu
		50				55					60				
Leu	Leu	Asp	Asp	Val	Asp	Asn	Glu	Met	Ala	Ala	Ile	Ala	Met	Gln	Gly
		65			70				75					80	
Phe	Arg	Ser	Met	Ile	Glu	Gln	Phe	Asn	Val	Asn	Asn	Pro	Ala	Thr	Ala
				85					90					95	
Lys	Glu	Leu	Gln	Ala	Met	Glu	Ala	Gln	Leu	Thr	Ala	Met	Ser	Asp	Gln
			100					105					110		
Leu	Val	Gly	Ala	Asp	Gly	Glu	Leu	Pro	Ala	Glu	Ile	Gln	Ala	Ile	Lys
		115					120					125			
Asp	Ala	Leu	Ala	Gln	Ala	Leu	Lys	Gln	Pro	Ser	Ala	Asp	Gly	Leu	Ala
		130				135					140				
Thr	Ala	Met	Gly	Gln	Val	Ala	Phe	Ala	Ala	Ala	Lys	Val	Gly	Gly	Gly
		145			150				155					160	
Ser	Ala	Gly	Thr	Ala	Gly	Thr	Val	Gln	Met	Asn	Val	Lys	Gln	Leu	Tyr
				165				170						175	
Lys	Thr	Ala	Phe	Ser	Ser	Thr	Ser	Ser	Ser	Ser	Tyr	Ala	Ala	Ala	Leu
			180					185					190		
Ser	Asp	Gly	Tyr	Ser	Ala	Tyr	Lys	Thr	Leu	Asn	Ser	Leu	Tyr	Ser	Glu
		195					200					205			
Ser	Arg	Ser	Gly	Val	Gln	Ser	Ala	Ile	Ser	Gln	Thr	Ala	Asn	Pro	Ala
		210				215					220				
Leu	Ser	Arg	Ser	Val	Ser	Arg	Ser	Gly	Ile	Glu	Ser	Gln	Gly	Arg	Ser
		225			230					235				240	
Ala	Asp	Ala	Ser	Gln	Arg	Ala	Ala	Glu	Thr	Ile	Val	Arg	Asp	Ser	Gln
				245				250					255		
Thr	Leu	Gly	Asp	Val	Tyr	Ser	Arg	Leu	Gln	Val	Leu	Asp	Ser	Leu	Met
			260					265					270		

Ser Thr Ile Val Ser Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln
 275 280 285
 Lys Leu Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala
 290 295 300
 Val Gln Asn Ser Val Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu
 305 310 315 320
 Arg Glu Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn
 325 330 335
 Ala Phe Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile
 340 345 350
 Ala Ser Leu Phe Ser Gly Tyr Leu Ser
 355 360

<210> 300
 <211> 207
 <212> PRT
 <213> Chlamydia

<400> 300
 Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val Ala Asp Ala Arg
 5 10 15
 Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp Ala Tyr Leu Phe
 20 25 30
 Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu Gly Ile Leu Ile
 35 40 45
 Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln Pro Phe Val Leu
 50 55 60
 Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile Gly Glu Trp Leu
 65 70 75 80
 Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile Ile Thr Asp Ser
 85 90 95
 His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile Gly Leu Cys Trp
 100 105 110
 Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser Leu Asp Cys Phe
 115 120 125
 Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val Asp Ala Leu Ala
 130 135 140
 Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu Gln Thr Pro Leu
 145 150 155 160
 Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His Ser Tyr Pro Thr
 165 170 175

Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys
195 200 205

<400> 301
Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp
 5 10 15

Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu
35 40 45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu
50 55 60

Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly
65 70 75 80

Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile
85 90 95

Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg
100 105 110

Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser
115 120 125

Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala
130 135 140

Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly
145 150 155 160

Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg
165 170 175

Pro Pro Ala Gly Gly Ser Ala
180

<400> 302

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp
5 10 15

Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln
20 25 30

Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu
35 40 45

Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
50 55 60

Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala
65 70 75 80

Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
85 90 95

Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp
100 105 110

Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
115 120 125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr
130 135 140

Val Thr Thr Asp Val Val Lys Thr Ile Ala Glu Leu Arg Lys Gly Lys
145 150 155 160

Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala
165 170 175

Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
180 185 190

Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr
195 200 205

Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
210 215 220

Asp Thr Arg Glu Leu Ile Ala Leu
225 230

<210> 303
<211> 238
<212> PRT
<213> chlamydia

<400> 303
Ile Asn Ser Lys Leu Glu Thr Lys Asn Leu Ile Tyr Leu Lys Leu Lys
5 10 15

Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn
20 25 30

Thr Gln Asn Cys Val Phe Ala Asp Asn Ile Lys Val Gly Gln Met Thr
 35 40 45
 Glu Pro Leu Lys Asp Gln Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro
 50 55 60
 Val Ala Ala Lys Met Thr Ala Ser Asp Gly Ile Ser Leu Thr Val Ser
 65 70 75 80
 Asn Asn Pro Ser Thr Asn Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu
 85 90 95
 Lys Ala Tyr Gln Leu Ile Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly
 100 105 110
 Gly Ile Ala Asp Thr Ile Val Asp Ser Thr Val Gln Asp Ile Leu Asp
 115 120 125
 Lys Ile Thr Thr Asp Pro Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn
 130 135 140
 Phe Pro Ile Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg
 145 150 155 160
 Asn Ile Glu Thr Leu Leu Gly Gly Thr Glu Ile Gly Lys Phe Thr Val
 165 170 175
 Thr Pro Lys Ser Ser Gly Ser Met Phe Leu Val Ser Ala Asp Ile Ile
 180 185 190
 Ala Ser Arg Met Glu Gly Gly Val Val Leu Ala Leu Val Arg Glu Gly
 195 200 205
 Asp Ser Lys Pro Tyr Ala Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro
 210 215 220
 Asn Leu Cys Ser Leu Arg Thr Arg Ile Ile Asn Thr Gly Leu
 225 230 235

 <210> 304
 <211> 133
 <212> PRT
 <213> Chlamydia

 <400> 304
 His Met His His His His His His Met Ala Ser Ile Cys Gly Arg Leu
 5 10 15
 Gly Ser Gly Thr Gly Asn Ala Leu Lys Ala Phe Phe Thr Gln Pro Ser
 20 25 30
 Asn Lys Met Ala Arg Val Val Asn Lys Thr Lys Gly Met Asp Lys Thr
 35 40 45
 Val Lys Val Ala Lys Ser Ala Ala Glu Leu Thr Ala Asn Ile Leu Glu
 50 55 60

Gln Ala Gly Gly Ala Gly Ser Ser Ala His Ile Thr Ala Ser Gln Val
 65 70 75 80
 Ser Lys Gly Leu Gly Asp Thr Arg Thr Val Val Ala Leu Gly Asn Ala
 85 90 95
 Phe Asn Gly Ala Leu Pro Gly Thr Val Gln Ser Ala Gln Ser Phe Phe
 100 105 110
 Ser His Met Lys Ala Ala Ser Gln Lys Thr Gln Glu Gly Asp Glu Gly
 115 120 125
 Leu Thr Ala Asp Leu
 130

<210> 305
 <211> 125
 <212> PRT
 <213> Chlamydia

<400> 305
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu
 115 120 125

<210> 306
 <211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 306
 gagagcggcc gctcatgttt ataacaaagg aacttatg

<210> 307
 <211> 39
 <212> DNA
 <213> Chlamydia trachomatis

<400> 307
 gagagcggcc gcttacttag gtgagaagaa gggagtttc 39

<210> 308
 <211> 1860
 <212> DNA
 <213> Chlamydia trachomatis

<400> 308
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcacatcc cgggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
 ggcacgcgta cagggaaagt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcggccgct catgtttata acaaaggaaac ttatgaatcg agttatagaa 480
 atccatgctc actacgatca aagacaactt tctcaatctc caaatacaaaa cttcttagta 540
 catcatcctt atcttactct tattcccaag tttctactag gagctctaatt cgtctatgct 600
 ccttattcgt ttgcagaaat ggaattagct atttctggac ataaacaagg taaagatcga 660
 gataccttta ccatgatctc ttcctgtcct gaaggcacta attacatcat caatcgcaaa 720
 ctcatactca gtgatttctc gttactaaat aaagtttcat cagggggagc ctttcggaat 780
 ctagcagga aaatttcctt cttaggaaaa aattcttctg cgtccattca ttttaaacac 840
 attaatatca atggttttgg agccggagtc ttttctgaat cctctattga atttactgat 900
 ttacgaaaac ttgttgcttt tggatctgaa agcacaggag gaatttttac tgcgaaagag 960
 gacatctctt ttaaaaacaa ccaccacatt gccttccgca ataatatcac caaagggaat 1020
 ggtggcggtta tccagctcca aggagatatg aaaggaagcg tatcctttgt agatcaacgt 1080
 ggagctatca tctttaccaa taaccaagct gtaacttctt catcaatgaa acatagtggg 1140
 cgtggaggag caattagcgg tgacttcgca ggatccagaa ttctttttct taataaccaa 1200
 caaattactt tcgaaggcaa tagcgtctgt catggagggt ctatctacaa taagaatggc 1260
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 aacgggggag ctatatacac aagtaatttc aaagcgaatc aacaaacatc cccatttcta 1380
 ttctctcaaa atcatgcgaa taagaaaggc ggagcgattt acgcgcaata tgtgaactta 1440
 gaacagaatc aagatactat tcgctttgaa aaaaataaccg ctaaagaagg cggtaggagc 1500
 atcacctctt ctcaatgctc aattactgct cataatacca tcaacttttc cgataatgct 1560
 gccggagatc ttggaggagg agcaattctt ctagaaggga aaaaaccttc tctaaccttg 1620
 attgctcata gtggtaatat tgcatttagc ggcaatacca tgcttcatat caccaaaaaa 1680
 gcttccctag atcgacacaa ttctatctta atcaaagaag ctccctataa aatccaactt 1740
 gcagcgaaca aaaaccattc tattcatttc tttgatcctg tcatggcatt gtcagcatca 1800
 tcttccccta tacaatcaa tgctcctgag tatgaaactc ccttcttctc acctaagtaa 1860

<210> 309
 <211> 619
 <212> PRT
 <213> Chlamydia trachomatis

<400> 309
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 1 5 10 15
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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala

		35					40					45				
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val	
	50					55					60					
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr	
65					70					75					80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr	
				85					90					95		
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser	
			100					105					110			
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr	
		115					120					125				
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp	
	130					135					140					
Arg	Pro	Leu	Met	Phe	Ile	Thr	Lys	Glu	Leu	Met	Asn	Arg	Val	Ile	Glu	
145					150					155					160	
Ile	His	Ala	His	Tyr	Asp	Gln	Arg	Gln	Leu	Ser	Gln	Ser	Pro	Asn	Thr	
				165					170					175		
Asn	Phe	Leu	Val	His	His	Pro	Tyr	Leu	Thr	Leu	Ile	Pro	Lys	Phe	Leu	
			180					185					190			
Leu	Gly	Ala	Leu	Ile	Val	Tyr	Ala	Pro	Tyr	Ser	Phe	Ala	Glu	Met	Glu	
		195					200					205				
Leu	Ala	Ile	Ser	Gly	His	Lys	Gln	Gly	Lys	Asp	Arg	Asp	Thr	Phe	Thr	
	210					215					220					
Met	Ile	Ser	Ser	Cys	Pro	Glu	Gly	Thr	Asn	Tyr	Ile	Ile	Asn	Arg	Lys	
225					230					235					240	
Leu	Ile	Leu	Ser	Asp	Phe	Ser	Leu	Leu	Asn	Lys	Val	Ser	Ser	Gly	Gly	
				245					250					255		
Ala	Phe	Arg	Asn	Leu	Ala	Gly	Lys	Ile	Ser	Phe	Leu	Gly	Lys	Asn	Ser	
			260					265					270			
Ser	Ala	Ser	Ile	His	Phe	Lys	His	Ile	Asn	Ile	Asn	Gly	Phe	Gly	Ala	
		275					280					285				
Gly	Val	Phe	Ser	Glu	Ser	Ser	Ile	Glu	Phe	Thr	Asp	Leu	Arg	Lys	Leu	
	290					295					300					
Val	Ala	Phe	Gly	Ser	Glu	Ser	Thr	Gly	Gly	Ile	Phe	Thr	Ala	Lys	Glu	
305					310					315					320	
Asp	Ile	Ser	Phe	Lys	Asn	Asn	His	His	Ile	Ala	Phe	Arg	Asn	Asn	Ile	
				325					330					335		
Thr	Lys	Gly	Asn	Gly	Gly	Val	Ile	Gln	Leu	Gln	Gly	Asp	Met	Lys	Gly	
			340					345					350			
Ser	Val	Ser	Phe	Val	Asp	Gln	Arg	Gly	Ala	Ile	Ile	Phe	Thr	Asn	Asn	
		355					360					365				
Gln	Ala	Val	Thr	Ser	Ser	Ser	Met	Lys	His	Ser	Gly	Arg	Gly			

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<210> 310
<211> 39
<212> DNA
<213> Chlamydia trachomatis

<400> 310
gagagcggcc gctccattct attcatttct ttgatcctg

<210> 311
<211> 33
<212> DNA
<213> Chlamydia trachomatis

<400> 311
gagagcggcc gcttagaagc caacatagcc tcc

<210> 312
<211> 2076
<212> DNA
<213> Chlamydia trachomatis
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<400>	312						
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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc		120
accgttcata	tccgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac		180
ggcgcacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc		240
ggcgacgtga	tcaccgcggt	cgaaggcgct	ccgatcaact	cggccaccgc	gatggcggac		300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc		360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat		420
ccatcacact	ggcggcccgct	ccatttctatt	catttctttg	atcctgtcat	ggcattgtca		480
gcatcatctt	ccctataaca	aatcaatgct	cctgagtatg	aaactccctt	cttctcacct		540
aagggtatga	tcgtttttctc	gggtgcgaat	cttttagatg	atgctaggga	agatgttgca		600
aatagaacat	cgatttttta	ccaacccggt	catctatata	atggcaccct	atctatcgaa		660
aatggagccc	atctgattgt	ccaaagcttc	aaacagaccg	gaggacgtat	cagtttatct		720
ccaggatcct	ccttggtctct	atacacgatg	aactcgttct	tccatggcaa	catatccagc		780
aaagaacccc	tagaaattaa	tggtttaagc	tttgagtag	atatctctcc	ttctaattct		840
caagcagaga	tccgtgcccgg	caacgctcct	ttacgattat	ccggatcccc	atcataacct		900
gatcctgaag	gattatttcta	cgaaaatcgc	gatactgcag	catcaccata	ccaaatggaa		960
atcttgctca	atcttgataa	acagttagat	atctccaaat	ttactactga	ttctctagtt		1020
acgaacaaac	aatcaggatt	ccaaggagcc	tggcatttta	gctggcagcc	aaatactata		1080

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aacaatacta aacaaaaaat attaagagct tcttggctcc caacaggaga atatgtcctt 1140
gaatccaatc gagtggggcg tgccgttcct aattccttat ggagcacatt tttactttta 1200
cagacagcct ctcataactt aggcgatcat ctatgtaata atcgatctct tattcctact 1260
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aatagcttat cctgcggagg ctatgttggc ttctaa 2076

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<210> 313

<211> 691

<212> PRT

<213> Chlamydia trachomatis

<400> 313

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
  20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
  35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
  50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
  65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
  85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
  100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Thr Arg Thr Gly Asn Val Thr
  115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
  130         135         140
Arg Pro Leu His Ser Ile His Phe Phe Asp Pro Val Met Ala Leu Ser
  145         150         155         160
Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala Pro Glu Tyr Glu Thr Pro
  165         170         175
Phe Phe Ser Pro Lys Gly Met Ile Val Phe Ser Gly Ala Asn Leu Leu
  180         185         190
Asp Asp Ala Arg Glu Asp Val Ala Asn Arg Thr Ser Ile Phe Asn Gln
  195         200         205
Pro Val His Leu Tyr Asn Gly Thr Leu Ser Ile Glu Asn Gly Ala His
  210         215         220
Leu Ile Val Gln Ser Phe Lys Gln Thr Gly Gly Arg Ile Ser Leu Ser
  225         230         235         240
Pro Gly Ser Ser Leu Ala Leu Tyr Thr Met Asn Ser Phe Phe His Gly
  245         250         255
Asn Ile Ser Ser Lys Glu Pro Leu Glu Ile Asn Gly Leu Ser Phe Gly

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<210> 314

<211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 314
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<210> 315
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 315
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<210> 316
 <211> 1941
 <212> DNA
 <213> Chlamydia trachomatis

<400> 316
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgacagag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtagacgtc atctcggtga cctggcaaac caagtcgggc 360
 ggacgcgta cagggaaact gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcgccgct catgattaaa agaacttctc tatectttgc ttgcctcagt 480
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 accgcccata acatcggttt atctaattta cagtaaaacg gaaccggagc ctgtaccatt 660
 tcaggcaata cgcaaaactc aatcttttct aattccgtta acaccaccgc agattctggg 720
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 ctttttcata ttaataataa tgagataaca ccatatacat tgtctctcgg cgctaaaaaa 1680
 gatactcgta tctattttta tgatcttttc caatgggagc gtgttaaaga aaatactagc 1740
 aataaccac catctcctac cagtagaaac accattaccg ttaaccggga aacagagttt 1800
 totggagctg ttgtgttctc ctacaatcaa atgtctagtg acatacgaac tctgatgggt 1860
 aaagaacaca attacattaa agaagcccca actactttta aattcggaac gctagccata 1920
 gaagatgatg cagaattata a 1941

<210> 317
 <211> 646

<212> PRT

<213> Chlamydia trachomatis

<400> 317

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55				60					
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75				80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Ile	Lys	Arg	Thr	Ser	Leu	Ser	Phe	Ala	Cys	Leu	Ser
145					150					155				160	
Phe	Phe	Tyr	Leu	Ser	Thr	Ile	Ser	Ile	Leu	Gln	Ala	Asn	Glu	Thr	Asp
				165					170					175	
Thr	Leu	Gln	Phe	Arg	Arg	Phe	Thr	Phe	Ser	Asp	Arg	Glu	Ile	Gln	Phe
			180					185					190		
Val	Leu	Asp	Pro	Ala	Ser	Leu	Ile	Thr	Ala	Gln	Asn	Ile	Val	Leu	Ser
		195					200					205			
Asn	Leu	Gln	Ser	Asn	Gly	Thr	Gly	Ala	Cys	Thr	Ile	Ser	Gly	Asn	Thr
	210					215					220				
Gln	Thr	Gln	Ile	Phe	Ser	Asn	Ser	Val	Asn	Thr	Thr	Ala	Asp	Ser	Gly
225					230					235				240	
Gly	Ala	Phe	Asp	Met	Val	Thr	Thr	Ser	Phe	Thr	Ala	Ser	Asp	Asn	Ala
				245					250					255	
Asn	Leu	Leu	Phe	Cys	Asn	Asn	Tyr	Cys	Thr	His	Asn	Lys	Gly	Gly	Gly
			260					265					270		
Ala	Ile	Arg	Ser	Gly	Gly	Pro	Ile	Arg	Phe	Leu	Asn	Asn	Gln	Asp	Val
		275					280					285			
Leu	Phe	Tyr	Asn	Asn	Ile	Ser	Ala	Gly	Ala	Lys	Tyr	Val	Gly	Thr	Gly
	290					295					300				
Asp	His	Asn	Glu	Lys	Asn	Arg	Gly	Gly	Ala	Leu	Tyr	Ala	Thr	Thr	Ile
305					310					315				320	
Thr	Leu	Thr	Gly	Asn	Arg	Thr	Leu	Ala	Phe	Ile	Asn	Asn	Met	Ser	Gly
				325					330					335	
Asp	Cys	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Thr	Gln	Ile	Ser	Ile	Thr	Asp
			340					345					350		
Thr	Val	Lys	Gly	Ile	Leu	Phe	Glu	Asn	Asn	His	Thr	Leu	Asn	His	Ile
		355					360					365			
Pro	Tyr	Thr	Gln	Ala	Glu	Asn	Met	Ala	Arg	Gly	Gly	Ala	Ile	Cys	Ser
	370					375					380				
Arg	Arg	Asp	Leu	Cys	Ser	Ile	Ser	Asn	Asn	Ser	Gly	Pro	Ile	Val	Phe
385					390					395				400	
Asn	Tyr	Asn	Gln	Gly	Lys	Gly	Gly	Ala	Ile	Ser	Ala	Thr	Arg	Cys	
				405				410					415		
Val	Ile	Asp	Asn	Asn	Lys	Glu	Arg	Ile	Ile	Phe	Ser	Asn	Asn	Ser	Ser

F06210" 2224850

420 425 430
 Leu Gly Trp Ser Gln Ser Ser Ser Ala Ser Asn Gly Gly Ala Ile Gln
 435 440 445
 Thr Thr Gln Gly Phe Thr Leu Arg Asn Asn Lys Gly Ser Ile Tyr Phe
 450 455 460
 Asp Ser Asn Thr Ala Thr His Ala Gly Gly Ala Ile Asn Cys Gly Tyr
 465 470 475 480
 Ile Asp Ile Arg Asp Asn Gly Pro Val Tyr Phe Leu Asn Asn Ser Ala
 485 490 495
 Ala Trp Gly Ala Ala Phe Asn Leu Ser Lys Pro Arg Ser Ala Thr Asn
 500 505 510
 Tyr Ile His Thr Gly Thr Gly Asp Ile Val Phe Asn Asn Asn Val Val
 515 520 525
 Phe Thr Leu Asp Gly Asn Leu Gly Lys Arg Lys Leu Phe His Ile
 530 535 540
 Asn Asn Asn Glu Ile Thr Pro Tyr Thr Leu Ser Leu Gly Ala Lys Lys
 545 550 555 560
 Asp Thr Arg Ile Tyr Phe Tyr Asp Leu Phe Gln Trp Glu Arg Val Lys
 565 570 575
 Glu Asn Thr Ser Asn Asn Pro Pro Ser Pro Thr Ser Arg Asn Thr Ile
 580 585 590
 Thr Val Asn Pro Glu Thr Glu Phe Ser Gly Ala Val Val Phe Ser Tyr
 595 600 605
 Asn Gln Met Ser Ser Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn
 610 615 620
 Tyr Ile Lys Glu Ala Pro Thr Thr Leu Lys Phe Gly Thr Leu Ala Ile
 625 630 635 640
 Glu Asp Asp Ala Glu Leu
 645

<210> 318
 <211> 34
 <212> DNA
 <213> Chlamydia trachomatis

<400> 318
 gagagcggcc gctcgacata cgaactctga tggg

34

<210> 319
 <211> 33
 <212> DNA
 <213> Chlamydia trachomatis

<400> 319
 gagagcggcc gcttaaaaga ccagagctcc tcc

33

<210> 320
 <211> 2148
 <212> DNA
 <213> Chlamydia trachomatis

<400> 320
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 cagggatctcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

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gcgcttaacg ggcacatcc cgggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
ggcacgcgta cagggaaagt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
ccatcacact ggcgccgct cgacatacga actctgatgg gtaaagaaca caattacatt 480
aaagaagccc caactacttt aaaattcgga acgctagcca tagaagatga tgcagaatta 540
gaaatcttca atatcccggt tacccaaaat ccgactagcc ttcttgcttt aggaagcggc 600
gctacgctga ctggttgaaa gcaaggtaag ctcaatatta caaatcttgg tgttatttta 660
cccattattc tcaaagagg gaagagtcgg ccttgatttc gcgtcaaccc acaagatatg 720
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gatctagcta gattatttac attagagcaa gccatactg ccgttgctc tcctaatagga 1860
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taccaaccca ccctctactg gaaacgtcct ctactcaaca cactattaat ccaaaataac 1980
ggttcttggg tcaccacaaa taccocattha gctaaacatt ccttttatgg gagaggttct 2040
cactccctca aattttctca tctgaaacta tttgctaact atcaagcaga agtggctact 2100
tccactgtct cacactacat caatgcagga ggagctctgg tcttttaa 2148

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<210> 321

<211> 715

<212> PRT

<213> Chlamydia trachomatis

<400> 321

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Met His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130         135         140
Arg Pro Leu Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn Tyr Ile

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Glu Gln Ala His Thr Ala Val Val Ser Pro Ile Gly Ile Lys Gly Ala
 610 615 620
 Tyr Ser Ser Asp Thr Trp Pro Thr Leu Ser Trp Glu Met Glu Leu Ala
 625 630 635 640
 Tyr Gln Pro Thr Leu Tyr Trp Lys Arg Pro Leu Leu Asn Thr Leu Leu
 645 650 655
 Ile Gln Asn Asn Gly Ser Trp Val Thr Thr Asn Thr Pro Leu Ala Lys
 660 665 670
 His Ser Phe Tyr Gly Arg Gly Ser His Ser Leu Lys Phe Ser His Leu
 675 680 685
 Lys Leu Phe Ala Asn Tyr Gln Ala Glu Val Ala Thr Ser Thr Val Ser
 690 695 700
 His Tyr Ile Asn Ala Gly Gly Ala Leu Val Phe
 705 710 715

<210> 322

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 322

gagagcggcc gctcatgcct ttttctttga gatctac

37

<210> 323

<211> 36

<212> DNA

<213> Chlamydia trachomatis

<400> 323

gagagcggcc gcttacacag atccattacc ggactg

36

<210> 324

<211> 1896

<212> DNA

<213> Chlamydia trachomatis

<400> 324

atgcatcacc	atcaccatca	cacggccgcg	tccgataact	tccagctgtc	ccagggtggg	60
cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgcctttt	tctttgagat	ctacatcatt	ttgtttttta	480
gcttgtttgt	gttcttatte	gtatggattc	gcgagctctc	ctcaagtgtt	aacacctaatt	540
gtaaccactc	cttttaaggg	ggacgatgtt	tacttgaatg	gagactgcgc	ttttgtcaat	600
gtctatgcag	gggcagagaa	cggctcaatt	atctcagcta	atggcgacaa	tttaacgatt	660
accggacaaa	accatacatt	atcatttaca	gattotcaag	ggccagttct	tcaaaattat	720
gccttcattt	cagcaggaga	gacacttact	ctgaaagatt	tttcgagttt	gatgttctcg	780
aaaaatgttt	cttgcggaga	aaaggggaatg	atctcaggga	aaaccgtgag	tatttccgga	840
gcaggcgaag	tgattttttg	ggataactct	gtgggggtatt	ctcctttgtc	tattgtgccca	900
gcacgcactc	caactcctcc	agcaccagca	ccagctcctg	ctgcttcaag	ctcttttatct	960
ccaacagtta	gtgatgctcg	gaaagggtct	attttttctg	tagagactag	tttgagatc	1020
tcaggcgctca	aaaaagggtg	catgttcgat	aataatgccg	ggaatttttg	aacagttttt	1080
cgaggtaata	gtaataataa	tgctggtagt	gggggtagtg	ggtctgctac	aacaccaagt	1140
tttacagtta	aaaactgtaa	agggaaagtt	tctttcacag	ataacgtagc	ctcctgtgga	1200

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ggcggagtag tctacaaagg aactgtgctt ttcaaagaca atgaaggagg catattcttc 1260
cgagggaaca cagcatacga tgatttaggg attcttgctg ctactagtcg ggatcagaat 1320
acggagacag gaggcggtgg aggagttatt tgctctccag atgattctgt aaagtttgaa 1380
ggcaataaag gttctattgt ttttgattac aactttgcaa aaggcagagg cggaagcatc 1440
ctaacgaaag aattctctct tgtagcagat gattcgggtg tctttagtaa caatacagca 1500
gaaaaaggcg gtggagctat ttatgctcct actatcgata taagcacgaa tggaggatcg 1560
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actgtttctt taaatgcttc cggactatcg aagctgatct tttatgatcc ttagtagtaa 1800
aataattcag cagcgggtgc atcgacacca tcaccatctt cttcttctat gcctggtgct 1860
gtcacgatta atcagtcggt taatggatct gtgttaa 1896

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<210> 325

<211> 631

<212> PRT

<213> Chlamydia trachomatis

<400> 325

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130          135          140
Arg Pro Leu Met Pro Phe Ser Leu Arg Ser Thr Ser Phe Cys Phe Leu
145          150          155          160
Ala Cys Leu Cys Ser Tyr Ser Tyr Gly Phe Ala Ser Ser Pro Gln Val
165          170          175
Leu Thr Pro Asn Val Thr Thr Pro Phe Lys Gly Asp Asp Val Tyr Leu
180          185          190
Asn Gly Asp Cys Ala Phe Val Asn Val Tyr Ala Gly Ala Glu Asn Gly
195          200          205
Ser Ile Ile Ser Ala Asn Gly Asp Asn Leu Thr Ile Thr Gly Gln Asn
210          215          220
His Thr Leu Ser Phe Thr Asp Ser Gln Gly Pro Val Leu Gln Asn Tyr
225          230          235          240
Ala Phe Ile Ser Ala Gly Glu Thr Leu Thr Leu Lys Asp Phe Ser Ser
245          250          255
Leu Met Phe Ser Lys Asn Val Ser Cys Gly Glu Lys Gly Met Ile Ser
260          265          270
Gly Lys Thr Val Ser Ile Ser Gly Ala Gly Glu Val Ile Phe Trp Asp
275          280          285
Asn Ser Val Gly Tyr Ser Pro Leu Ser Ile Val Pro Ala Ser Thr Pro
290          295          300

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Thr Pro Pro Ala Pro Ala Pro Ala Pro Ala Ala Ser Ser Ser Leu Ser
 305 310 315 320
 Pro Thr Val Ser Asp Ala Arg Lys Gly Ser Ile Phe Ser Val Glu Thr
 325 330 335
 Ser Leu Glu Ile Ser Gly Val Lys Lys Gly Val Met Phe Asp Asn Asn
 340 345 350
 Ala Gly Asn Phe Gly Thr Val Phe Arg Gly Asn Ser Asn Asn Asn Ala
 355 360 365
 Gly Ser Gly Gly Ser Gly Ser Ala Thr Thr Pro Ser Phe Thr Val Lys
 370 375 380
 Asn Cys Lys Gly Lys Val Ser Phe Thr Asp Asn Val Ala Ser Cys Gly
 385 390 395 400
 Gly Gly Val Val Tyr Lys Gly Thr Val Leu Phe Lys Asp Asn Glu Gly
 405 410 415
 Gly Ile Phe Phe Arg Gly Asn Thr Ala Tyr Asp Asp Leu Gly Ile Leu
 420 425 430
 Ala Ala Thr Ser Arg Asp Gln Asn Thr Glu Thr Gly Gly Gly Gly Gly
 435 440 445
 Val Ile Cys Ser Pro Asp Asp Ser Val Lys Phe Glu Gly Asn Lys Gly
 450 455 460
 Ser Ile Val Phe Asp Tyr Asn Phe Ala Lys Gly Arg Gly Gly Ser Ile
 465 470 475 480
 Leu Thr Lys Glu Phe Ser Leu Val Ala Asp Asp Ser Val Val Phe Ser
 485 490 495
 Asn Asn Thr Ala Glu Lys Gly Gly Gly Ala Ile Tyr Ala Pro Thr Ile
 500 505 510
 Asp Ile Ser Thr Asn Gly Gly Ser Ile Leu Phe Glu Arg Asn Arg Ala
 515 520 525
 Ala Glu Gly Gly Ala Ile Cys Val Ser Glu Ala Ser Ser Gly Ser Thr
 530 535 540
 Gly Asn Leu Thr Leu Ser Ala Ser Asp Gly Asp Ile Val Phe Ser Gly
 545 550 555 560
 Asn Met Thr Ser Asp Arg Pro Gly Glu Arg Ser Ala Ala Arg Ile Leu
 565 570 575
 Ser Asp Gly Thr Thr Val Ser Leu Asn Ala Ser Gly Leu Ser Lys Leu
 580 585 590
 Ile Phe Tyr Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser
 595 600 605
 Thr Pro Ser Pro Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn
 610 615 620
 Gln Ser Gly Asn Gly Ser Val
 625 630

<210> 326
 <211> 40
 <212> DNA
 <213> Chlamydia trachomatis

<400> 326
 gagagcggcc gctcgatcct gtagtacaaa ataattcagc

40

<210> 327
 <211> 33
 <212> DNA
 <213> Chlamydia trachomatis

<400> 327

gagagcggcc gcttaaaaga ttctattcaa gcc

33

<210> 328

<211> 2148

<212> DNA

<213> Chlymadia trachomatis

<400> 328

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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tggggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgatcctgta	gtacaaaata	attcagcagc	gggtgcatcg	480
acaccatcac	catcttcttc	ttctatgcct	ggtgctgtca	cgattaatca	gtccggtaat	540
ggatctgtga	tttttaccgc	cgagtcattg	actccttcag	aaaaacttca	agttcttaac	600
tctacttcta	acttcccagg	agctctgact	gtgtcaggag	gggagttggt	tgtgacggaa	660
ggagctacct	taactactgg	gaccattaca	gccacctctg	gacgagtgc	tttaggatcc	720
ggagcttcgt	tgtctgccgt	tgcagggtgct	gcaaataata	attatacttg	tacagtatct	780
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gcagaggtct	atgataatcc	gctttttgtg	ggatcgctga	caattccttt	tgttactcta	960
tottctagta	gtgctagtaa	cggagttaca	aaaaattctg	tcactattaa	tgatgcagac	1020
gctgcgcact	atgggtatca	aggctcttgg	tctgcagatt	ggacgaaacc	gcctctggct	1080
cctgatgcta	aggggatggg	acctccta	acctaataaca	ctctgtatct	gacatggaga	1140
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aattatacgc	aagatgatcg	ggatggcctt	ttagctagat	atgggggatt	ccaggcgacc	1380
gcagcctccc	attatgaaaa	tgggtcaata	tttggagtgg	cttttggaca	actctatggg	1440
cagacaaaga	gcagaatgta	ttactctaaa	gatgctggga	acatgacgat	gttgtcctgt	1500
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tatggctatt	ctgtgcacag	aatgcatacg	cagtatttta	atgacaaaac	gcagaagttc	1620
gatcattcga	aatgtcattg	gcacaacaat	aactattatg	cgtttgtagg	tgccgagcat	1680
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aagacaccta	tacaaggatc	cccgtggca	cggcatgcct	tcttcttaga	agtgcagat	2040
actttgtata	ttcatcattt	tggaagagcc	tatatgaact	attcattaga	tgctcgctcg	2100
cgacaaaccg	cacattttgt	atctatgggc	ttgaatagaa	tcttttaa		2148

<210> 329

<211> 715

<212> PRT

<213> Chlamydia trachomatis

<400> 329

Met	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1			5					10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
		20					25					30		Ala
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
		35					40					45		

Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser
 145 150 155 160
 Thr Pro Ser Pro Ser Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn
 165 170 175
 Gln Ser Gly Asn Gly Ser Val Ile Phe Thr Ala Glu Ser Leu Thr Pro
 180 185 190
 Ser Glu Lys Leu Gln Val Leu Asn Ser Thr Ser Asn Phe Pro Gly Ala
 195 200 205
 Leu Thr Val Ser Gly Gly Glu Leu Val Val Thr Glu Gly Ala Thr Leu
 210 215 220
 Thr Thr Gly Thr Ile Thr Ala Thr Ser Gly Arg Val Thr Leu Gly Ser
 225 230 235 240
 Gly Ala Ser Leu Ser Ala Val Ala Gly Ala Ala Asn Asn Asn Tyr Thr
 245 250 255
 Cys Thr Val Ser Lys Leu Gly Ile Asp Leu Glu Ser Phe Leu Thr Pro
 260 265 270
 Asn Tyr Lys Thr Ala Ile Leu Gly Ala Asp Gly Thr Val Thr Val Asn
 275 280 285
 Ser Gly Ser Thr Leu Asp Leu Val Met Glu Asn Glu Ala Glu Val Tyr
 290 295 300
 Asp Asn Pro Leu Phe Val Gly Ser Leu Thr Ile Pro Phe Val Thr Leu
 305 310 315 320
 Ser Ser Ser Ser Ala Ser Asn Gly Val Thr Lys Asn Ser Val Thr Ile
 325 330 335
 Asn Asp Ala Asp Ala Ala His Tyr Gly Tyr Gln Gly Ser Trp Ser Ala
 340 345 350
 Asp Trp Thr Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro
 355 360 365
 Pro Asn Thr Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn
 370 375 380
 Tyr Gly Glu Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro
 385 390 395 400
 Asn Ser Leu Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly
 405 410 415
 Leu Lys Glu His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu
 420 425 430
 His Ala Leu Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp
 435 440 445
 Gly Phe Leu Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His
 450 455 460
 Tyr Glu Asn Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly
 465 470 475 480
 Gln Thr Lys Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr
 485 490 495
 Met Leu Ser Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu


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<210> 330
<211> 38
<212> DNA
<213> Chlymadia trachomatis
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38

34

<400>	332						
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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc		120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac		180
ggcgcacgag	tccaacgcgt	ggtcggggagc	gctccggcgg	caagtctcgg	catctccacc		240
ggcgcagctga	tcaccgcggt	cgacggcgct	cgcatacaat	cggccaccgc	gatggcgagc		300
gcgccttaacg	ggcatcatcc	cggatgcgtc	atctcgttga	cctggcaaac	caagtcgggc		360
ggcacgcgta	cagggaacgt	gcgattggcc	gagggacccc	cggccgaatt	ctgcagatat		420

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<210> 333
<211> 518
<212> PRT
<213> Chlymadia trachomatis
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Met 1	His	His	His	His 5	His	His	Thr	Ala	Ala 10	Ser	Asp	Asn	Phe	Gln 15	Leu
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile 25	Pro	Ile	Gly	Gln	Ala 30	Met	Ala
Ile	Ala	Gly 35	Gln	Ile	Lys	Leu	Pro 40	Thr	Val	His	Ile	Gly 45	Pro	Thr	Ala
Phe	Leu 50	Gly	Leu	Gly	Val	Val 55	Asp	Asn	Asn	Gly	Asn 60	Gly	Ala	Arg	Val
Gln 65	Arg	Val	Val	Gly	Ser 70	Ala	Pro	Ala	Ala	Ser 75	Leu	Gly	Ile	Ser	Thr 80
Gly	Asp	Val	Ile	Thr 85	Ala	Val	Asp	Gly	Ala 90	Pro	Ile	Asn	Ser	Ala 95	Thr
Ala	Met	Ala	Asp 100	Ala	Leu	Asn	Gly	His 105	His	Pro	Gly	Asp	Val 110	Ile	Ser
Val	Thr	Trp 115	Gln	Thr	Lys	Ser	Gly 120	Gly	Thr	Arg	Thr	Gly 125	Asn	Val	Thr
Leu	Ala 130	Glu	Gly	Pro	Pro	Ala 135	Glu	Phe	Cys	Arg	Tyr 140	Pro	Ser	His	Trp
Arg 145	Pro	Leu	Met	Lys 150	Trp	Leu	Ser	Ala	Thr	Ala 155	Val	Phe	Ala	Ala	Val 160
Leu	Pro	Ser	Val	Ser 165	Gly	Phe	Cys	Phe	Pro	Glu	Pro	Lys	Glu	Leu 175	Asn
Phe	Ser	Arg	Val 180	Glu	Thr	Ser	Ser	Ser 185	Thr	Thr	Phe	Thr	Glu 190	Thr	Ile
Gly	Glu	Ala 195	Gly	Ala	Glu	Tyr	Ile 200	Val	Ser	Gly	Asn 205	Ala	Ser	Phe	Thr
Lys	Phe 210	Thr	Asn	Ile	Pro	Thr 215	Thr	Asp	Thr	Thr	Thr 220	Pro	Thr	Asn	Ser
Asn 225	Ser	Ser	Ser	Ser 230	Ser	Gly	Glu	Thr	Ala	Ser 235	Val	Ser	Glu	Asp	Ser 240
Asp	Ser	Thr	Thr	Thr	Thr	Pro	Asp	Pro	Lys	Gly	Gly	Gly	Ala	Phe	Tyr

245 250 255
 Asn Ala His Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu
 260 265 270
 Gly Ser Leu Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Gly Ala
 275 280 285
 Ile Phe Ser Gln Gly Glu Leu Phe Thr Asp Leu Thr Ser Leu Thr
 290 295 300
 Ile Gln Asn Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly
 305 310 315 320
 Ser Thr Ile Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn
 325 330 335
 Ser Ala Glu Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala
 340 345 350
 Gln Thr Ala Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp
 355 360 365
 Ser Val Ser Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn
 370 375 380
 Leu Gln Ser His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr
 385 390 395 400
 Asp Thr Glu Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala
 405 410 415
 Ile Tyr Ala Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu
 420 425 430
 Phe Ser Ile Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu
 435 440 445
 Lys Asp Val Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn
 450 455 460
 Gly Ala Glu Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser
 465 470 475 480
 Ile Gln Ser Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln
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 Gly Gly Gly Ala Leu Tyr Val Glu Gly Gly Ile Asn Phe Gln Asp Leu
 500 505 510
 Glu Glu Ile Arg Ile Lys
 515

<210> 334

<211> 37

<212> DNA

<213> Chlymadia trachomatis

<400> 334

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37

<210> 335

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 335

gagagcggcc gcttagttct ctgttacaga taaggagac

39

<210> 336

<211> 1758

<212> DNA

<213> Chlymadia trachomatis

<400> 336

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accgttcata	tccggccctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
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ggcgacgtga	tcaccgcggt	cgacggcgct	cogatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cgggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaagt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgggtgacctc	tcaattcaat	cttctaaaca	gagtcttttt	480
aattctaact	acagtaaaca	aggtgggggg	gctctatatg	ttgaaggagg	tataaaacttc	540
caagatcttg	aagaaattcg	cattaagtac	aataaagctg	gaacgttcga	aacaaaaaaa	600
atcactttac	cttctttaaa	agctcaagca	tctgcaggaa	atgcagatgc	ttgggcctct	660
tcctctcctc	aatctggttc	tggagcaact	acagtctccg	actcaggaga	ctctagctct	720
ggctcagact	cggatacctc	agaaacagtt	ccagtcacag	ctaaaggcgg	tgggctttat	780
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gcgacagatg	ttggaggtgg	tgcttacgta	aaaggaaccc	ttacttgtga	aaactctcac	900
cgtctacaat	ttttgaaaaa	ctcttccgat	aaacaagggtg	gaggaatcta	cggagaagac	960
aacatcaccc	tatctaattt	gacaggggaag	actctattcc	aagagaatac	tgccaaagaa	1020
gagggcggtg	gactcttcat	aaaagggtaca	gataaagctc	ttacaatgac	aggactggat	1080
agtttctgtt	taattaataa	cacatcagaa	aaacatgggtg	gtggagcctt	tgttaccaa	1140
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ggtgaaacag	tcattactgg	caataaatct	acaggaggta	atgggtggagg	cgtgtgtaca	1260
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gattatgtag	ttgatacgac	tatcagcaaa	aacactgcta	agaaaggcgg	tggaatctat	1620
gctaaaaaag	ccaagatgtc	ccgcatagac	caactgaata	tctctgagaa	ctccgctaca	1680
gagatagggtg	gaggtatctg	ctgtaaagaa	tctttagaac	tagatgctct	agtctcctta	1740
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<210> 337

<211> 585

<212> PRT

<213> Chlamydia trachomatis

<400> 337

Met	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
			20					25				30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
			35				40					45		
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg
	50					55					60			
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser
	65				70					75				80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala
				85					90				95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile
			100					105					110	
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val
		115					120					125		
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His
	130					135					140			
Arg	Pro	Leu	Gly	Asp	Leu	Ser	Ile	Gln	Ser	Ser	Lys	Gln	Ser	Leu

<210> 338

<211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 338
 gagagcggcc gctcgaccaa ctgaatatct ctgagaac 38

<210> 339
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 339
 gagagcggcc gcttaagaga ctacgtggag ttctg 35

<210> 340
 <211> 1965
 <212> DNA
 <213> Chlamydia trachomatis

<400> 340
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtgacgtc atctoggtga cctggcaaac caagtcgggc 360
 ggcacgcgta cagggaaact gacattggcc gagggacccc cgccgaatt ctgcagatat 420
 ccatcacact ggccggcgct cgaccaactg aatatctctg agaactccgc tacagagata 480
 ggtggaggta tctgctgtaa agaactctta gaactagatg ctctagtctc cttatctgta 540
 acagagaacc ttgttgggaa agaaggtgga ggcttacatg ctaaaactgt aaatatttct 600
 aatctgaaat caggcttctc tttctcgaac aacaaagcaa actcctcatc cacaggagtc 660
 gcaacaacag cttcagcacc tgetgcagct gctgcttccc tacaagcagc cgcagcagcc 720
 gcaccatcat ctccagcaac accaacttat tcaggtgtag taggaggagc tatctatgga 780
 gaaaaggtta cattctctca atgtagcggg acttgtcagt tctctgggaa ccaagctatc 840
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 ccaggaacca ctcaatcgtc tcaaacagat gccattttta cccttcttgc ttcttctgga 1620
 aacattactt ttagcaacaa cagttttacag aataaccaag gtgatactcc cgctagcaag 1680
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 gaaactttag atattaataa agaagagaac agtaatccat atacaggaac tattgtgttc 1860
 tcttctgaat tacatgaaaa caaatcttac atcccacaga atgcaatcct tcacaacgga 1920
 actttagttc ttaaagagaa aacagaactc cacgtagtct cttaa 1965

<210> 341
 <211> 654

<213> Chlamydia trachomatis

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25				30			
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40				45				
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55				60					
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Gln	Leu	Asn	Ile	Ser	Glu	Asn	Ser	Ala	Thr	Glu	Ile
145					150					155				160	
Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser	Leu	Glu	Leu	Asp	Ala	Leu	Val
				165					170					175	
Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val	Gly	Lys	Glu	Gly	Gly	Gly	Leu
			180					185				190			
His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn	Leu	Lys	Ser	Gly	Phe	Ser	Phe
		195					200					205			
Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser	Thr	Gly	Val	Ala	Thr	Thr	Ala
	210				215						220				
Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser	Leu	Gln	Ala	Ala	Ala	Ala	Ala
225					230					235					240
Ala	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr	Tyr	Ser	Gly	Val	Val	Gly	Gly
				245					250					255	
Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe	Ser	Gln	Cys	Ser	Gly	Thr	Cys
			260					265					270		
Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp	Asn	Asn	Pro	Ser	Gln	Ser	Ser
		275					280					285			
Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Thr	Ser	Leu	Ser	Ile
	290					295					300				
Gly	Ser	Ser	Asp	Ala	Gly	Thr	Ser	Tyr	Ile	Phe	Ser	Gly	Asn	Ser	Val
305					310					315					320
Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly	Gln	Ile	Ala	Gly	Gly	Ala	Ile
				325					330					335	
Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys	Pro	Ala	Thr	Phe	Ser	Asn	Asn
			340					345					350		
Thr	Ala	Ser	Ile	Ala											

420 425 430
 Ser Phe Ile Phe Glu Arg Asn Gln Ala Asn Lys Arg Gly Ala Ile Tyr
 435 440 445
 Ser Pro Ser Val Ser Ile Lys Gly Asn Asn Ile Thr Phe Asn Gln Asn
 450 455 460
 Thr Ser Thr His Asp Gly Ser Ala Ile Tyr Phe Thr Lys Asp Ala Thr
 465 470 475 480
 Ile Glu Ser Leu Gly Ser Val Leu Phe Thr Gly Asn Asn Val Thr Ala
 485 490 495
 Thr Gln Ala Ser Ser Ala Thr Ser Gly Gln Asn Thr Asn Thr Ala Asn
 500 505 510
 Tyr Gly Ala Ala Ile Phe Gly Asp Pro Gly Thr Thr Gln Ser Ser Gln
 515 520 525
 Thr Asp Ala Ile Leu Thr Leu Leu Ala Ser Ser Gly Asn Ile Thr Phe
 530 535 540
 Ser Asn Asn Ser Leu Gln Asn Asn Gln Gly Asp Thr Pro Ala Ser Lys
 545 550 555 560
 Phe Cys Ser Ile Ala Gly Tyr Val Lys Leu Ser Leu Gln Ala Ala Lys
 565 570 575
 Gly Lys Thr Ile Ser Phe Phe Asp Cys Val His Thr Ser Thr Lys Lys
 580 585 590
 Thr Gly Ser Thr Gln Asn Val Tyr Glu Thr Leu Asp Ile Asn Lys Glu
 595 600 605
 Glu Asn Ser Asn Pro Tyr Thr Gly Thr Ile Val Phe Ser Ser Glu Leu
 610 615 620
 His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly
 625 630 635 640
 Thr Leu Val Leu Lys Glu Lys Thr Glu Leu His Val Val Ser
 645 650

<210> 342
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 342
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36

<210> 343
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 343
 gagagcggcc gcttagaaga tcatgcgagc accgc

35

<210> 344
 <211> 2103
 <212> DNA
 <213> Chlamydia trachomatis

<400> 344
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 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgcttctctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gtcgggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

gcgcttaacg ggcacatcc cggtgacgtc atctcggtga cctggcaaac caagtcgggc 360
 ggcacgcgta caggggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggogggccgct cggaactatt gtgttctctt ctgaattaca tgaaaacaaa 480
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 gatctttcca gtatggggac tcctcaagca ggggaaatct tctctcctcc agaattacgt 720
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 aatcctaataa ggattttctgc agcagtgcct tcaggttctg ccgcaactac tccaactatg 840
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 gcagaataca gtactcaact atatcttggt cccttctgga ctctctacgg aaactatact 2040
 atcgatgtag gcatgtatac gctatcgcaa atgactagct gcggtgctcg catgatcttc 2100
 taa 2103

<210> 345

<211> 700

<212> PRT

<213> Chlamydia trachomatis

<400> 345

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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Gly Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys

145	150										155					160	
Ser	Tyr	Ile	Pro	Gln	Asn	Ala	Ile	Leu	His	Asn	Gly	Thr	Leu	Val	Leu		
				165					170					175			
Lys	Glu	Lys	Thr	Glu	Leu	His	Val	Val	Ser	Phe	Glu	Gln	Lys	Glu	Gly		
			180					185					190				
Ser	Lys	Leu	Ile	Met	Glu	Pro	Gly	Ala	Val	Leu	Ser	Asn	Gln	Asn	Ile		
		195					200					205					
Ala	Asn	Gly	Ala	Leu	Ala	Ile	Asn	Gly	Leu	Thr	Ile	Asp	Leu	Ser	Ser		
	210					215					220						
Met	Gly	Thr	Pro	Gln	Ala	Gly	Glu	Ile	Phe	Ser	Pro	Pro	Glu	Leu	Arg		
225				230					235						240		
Ile	Val	Ala	Thr	Thr	Ser	Ser	Ala	Ser	Gly	Gly	Ser	Gly	Val	Ser	Ser		
			245					250					255				
Ser	Ile	Pro	Thr	Asn	Pro	Lys	Arg	Ile	Ser	Ala	Ala	Val	Pro	Ser	Gly		
			260					265					270				
Ser	Ala	Ala	Thr	Thr	Pro	Thr	Met	Ser	Glu	Asn	Lys	Val	Phe	Leu	Thr		
		275					280					285					
Gly	Asp	Leu	Thr	Leu	Ile	Asp	Pro	Asn	Gly	Asn	Phe	Tyr	Gln	Asn	Pro		
	290					295					300						
Met	Leu	Gly	Ser	Asp	Leu	Asp	Val	Pro	Leu	Ile	Lys	Leu	Pro	Thr	Asn		
305				310						315					320		
Thr	Ser	Asp	Val	Gln	Val	Tyr	Asp	Leu	Thr	Leu	Ser	Gly	Asp	Leu	Phe		
			325					330					335				
Pro	Gln	Lys	Gly	Tyr	Met	Gly	Thr	Trp	Thr	Leu	Asp	Ser	Asn	Pro	Gln		
			340					345					350				
Thr	Gly	Lys	Leu	Gln	Ala	Arg	Trp	Thr	Phe	Asp	Thr	Tyr	Arg	Arg	Trp		
		355					360					365					
Val	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly		
	370					375					380						
Ser	Gln	Asn	Ser	Met	Ile	Val	Val	Lys	Gln	Gly	Leu	Ile	Asn	Asn	Met		
385				390						395					400		
Leu	Asn	Asn	Ala	Arg	Phe	Asp	Asp	Ile	Ala	Tyr	Asn	Asn	Phe	Trp	Val		
			405						410				415				
Ser	Gly	Val	Gly	Thr	Phe	Leu	Ala	Gln	Gln	Gly	Thr	Pro	Leu	Ser	Glu		
			420					425					430				
Glu	Phe	Ser	Tyr	Tyr	Ser	Arg	Gly	Thr	Ser	Val	Ala	Ile	Asp	Ala	Lys		
		435					440					445					
Pro	Arg	Gln	Asp	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Lys	Ile	Val	Gly		
	450					455				460							
Lys	Thr	Lys	Ala	Ile	Lys	Lys	Met	His	Asn	Tyr	Phe	His	Lys	Gly	Ser		
465				470						475					480		
Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val	Tyr	Gly	Gly	Lys	Phe	Leu	Tyr	Phe		
			485						490				495				
Leu	Leu	Asn	Lys	Gln	His	Gly	Trp	Ala	Leu	Pro	Phe	Leu	Ile	Gln	Gly		
			500					505									

Ala Ile Met Asn Cys Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala
 610 615 620
 Tyr Met Pro Ser Ile Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val
 625 630 635 640
 Leu Ser Ser Asn Glu Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg
 645 650 655
 Thr Ser Ala Arg Ala Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe
 660 665 670
 Trp Thr Leu Tyr Gly Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu
 675 680 685
 Ser Gln Met Thr Ser Cys Gly Ala Arg Met Ile Phe
 690 695 700

<210> 346

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 346

gagagcggcc gctcatgaaa tttatgtcag ctactgc

37

<210> 347

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 347

gagagcggcc gcttaccctg taattccagt gatggtc

37

<210> 348

<211> 1464

<212> DNA

<213> Chlamydia trachomatis

<400> 348

atgcatcacc	atcaccatca	cacggccgcg	tccgataact	tccagctgtc	ccaggggtggg	60
cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcacgcgcgt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtccggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgaaattt	atgtcagcta	ctgctgtatt	tgctgcagta	480
ctctcctccg	ttactgaggc	gagctcgatc	caagatcaaa	taaagaatac	cgactgcaat	540
gttagcaaaag	taggatattc	aacttctcaa	gcatttactg	atatgatgct	agcagacaac	600
acagagtatc	gagctgctga	tagtgtttca	ttctatgact	tttcgacatc	ttccggatta	660
cctagaaaac	atcttagtag	tagtagtgaa	gcttctccaa	cgacagaagg	agtgtcttca	720
tcttcatctg	gagaaaatac	tgagaattca	caagattcag	ctccctcttc	tggagaaact	780
gataagaaaa	cagaagaaga	actagacaat	ggcggaatca	tttatgctag	agagaaacta	840
actatctcag	aatctcagga	ctctctctct	aatccaagca	tagaactcca	tgacaatagt	900
tttttcttcg	gagaagggtga	agttatcttt	gatcacagag	ttgccctcaa	aaacggagga	960
gctattttatg	gagagaaaaga	ggtagtcttt	gaaaacataa	aatctctact	agtagaagta	1020
aatatctcgg	tcgagaaaagg	gggtagcgtc	tatgcaaaaag	aacgagtatc	tttagaaaat	1080
gttaccgaag	caaccttctc	ctccaatggt	ggggaacaag	gtggtggtgg	aatctattca	1140
gaacaagata	tgtaaatcag	tgattgcaac	aatgtacatt	tccaagggaa	tgctgcagga	1200
gcaacagcag	taaaacaatg	tctggatgaa	gaaatgatcg	tattgctcac	agaatgcggt	1260
gatagcttat	ccgaagatac	actggaatgc	actccagaaa	cggaacagac	taagtcaaat	1320

ggaaatcaag atgggttcgtc tgaacacaaa gatacacaag tatcagaatc accagaatca 1380
 actoctagcc ccgacgatgt tttaggtaaa ggtgggtgga tctatacaga aaaatctttg 1440
 accatcactg gaattacagg gtaa 1464

<210> 349

<211> 487

<212> PRT

<213> Chlamydia trachomatis

<400> 349

Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1 5 10 15
 Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Val
 145 150 155 160
 Leu Ser Ser Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn
 165 170 175
 Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe
 180 185 190
 Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser
 195 200 205
 Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His
 210 215 220
 Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser
 225 230 235 240
 Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser
 245 250 255
 Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Leu Asp Asn Gly Gly
 260 265 270
 Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser
 275 280 285
 Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly
 290 295 300
 Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly
 305 310 315 320
 Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu
 325 330 335
 Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala
 340 345 350
 Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe Ser Ser
 355 360 365
 Asn Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln Asp Met

CCCTT360

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<210> 350
<211> 37
<212> DNA
<213> Chlamydia trachomatis
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37

37

<400>	352						
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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc		120
accgttcata	tcgggcctac	cgcttccctc	ggcttgggtg	ttgtcgacaa	caacggcaac		180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc		240
ggcgacgtga	taccgcgggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac		300
gcgtttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtccggc		360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat		420
ccatcacact	ggcgccgctt	cgatacacaa	gtatcagaat	caccagaatc	aactcctagc		480
cccgacgatg	tttttaggtaa	aggtgggtgt	atctatacag	aaaaatcttt	gaccatcact		540
ggaattacag	ggactataga	ttttgtcagt	aacatagcta	ccgattctgg	agcaggtgta		600
ttactaaag	aaaacttgtc	ttgcaccaac	acgaatagcc	tacagttttt	gaaaaactcg		660
gcaggtcaac	atggaggagg	agcctacgtt	actcaaacca	tgtctgttac	taatacaact		720
agtgaaagta	taactactcc	cctctctgta	ggagaagtga	ttttctctga	aaatacagct		780
aaagggcacg	gtggtggtat	ctgcactaac	aaactttctt	tatctaattt	aaaaacggtg		840
actctcacta	aaaactctgc	aaaggagtot	ggaggagcta	tttttacaga	tctagcgtct		900
ataccaacaa	cagatacccc	agagtcttct	acccctcttt	cctcctcgcc	tgcaagcact		960
cccgaagtag	ttgcttctgc	taaaataaat	cgattctttg	cctctacggc	agaacggca		1020
gcccttctct	taacagaggc	tgagtcgtgat	caaacggatc	aaacagaaac	ttctgatact		1080
aatagcgata	tagacgtgtc	gatttgaqaac	atthttgaatg	tgcgtatcaa	tcaaaacact		1140

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tctgogaaaa aaggaggggc tatttacggg aaaaaagcta aactttcccg tattaacaat 1200
cttgaacttt caggggaattc atcccaggat gtaggaggag gtctctgttt aactgaaagc 1260
gtagaatttg atgcaattgg atcgctctta tcccactata actctgctgc taaagaaggt 1320
ggggttattc attctaaaac gggtactcta tctaacctca agtctacctt cacttttgca 1380
gataaactg ttaaagcaat agtagaaagc actcctgaag ctccagaaga gattcctcca 1440
gtagaaggag aagagtctac agcaacagaa aatccgaatt ctaatacaga aggaagttcg 1500
gctaactata accttgaagg atctcaaggg gatactgctg atacagggac tgggtgtgtt 1560
aacaatgagt ctcaagacac atcagatact ggaaacgctg aatctggaga acaactacaa 1620
gattctacac aatctaata agaaaatacc cttcccaata gtagtattga tcaatctaac 1680
gaaaacacag acgaatcatc tgatagccac actgaggaaa taactgacga gagtgtctca 1740
tcgtcctctt aa 1752

```

<210> 353

<211> 583

<212> PRT

<213> Chlamydia trachomatis

<400> 353

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
1      5      10
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20      25      30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35      40      45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50      55      60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65      70      75
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85      90      95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100     105     110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115     120     125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130     135     140
Arg Pro Leu Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser
145     150     155
Pro Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys Ser
165     170     175
Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn Ile
180     185     190
Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser Cys
195     200     205
Thr Asn Thr Asn Ser Leu Gln Phe Leu Lys Asn Ser Ala Gly Gln His
210     215     220
Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr Thr
225     230     235
Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe Ser
245     250     255
Glu Asn Thr Ala Lys Gly His Gly Gly Ile Cys Thr Asn Lys Leu
260     265     270
Ser Leu Ser Asn Leu Lys Thr Val Thr Leu Thr Lys Asn Ser Ala Lys
275     280     285
Glu Ser Gly Gly Ala Ile Phe Thr Asp Leu Ala Ser Ile Pro Thr Thr
290     295     300
Asp Thr Pro Glu Ser Ser Thr Pro Ser Ser Ser Ser Pro Ala Ser Thr

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The sequence is identical to the sequence in the GenBank database.

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<210> 354
<211> 39
<212> DNA
<213> Chlamydia trachomatis
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39

36

```
<210> 356
<211> 2052
<212> DNA
<213> Chlamydia trachomatis
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<400> 356

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atgcataccc atcaccatca cacggccgcg tccgataact tccagctgtc ccaggggtggg      60
cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc      120
accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac      180
ggcgacagag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc      240
ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac      300
gcgcttaacg ggcatacatc cgttgacgtc atctcgggtg cctggcaaac caagtccggc      360
ggcacgcgta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat      420
ccatcacact ggcggccgct cgatcaatct aacgaaaaca cagacgaatc atctgatagc      480
cacactgagg aaataactga cgagagtgtc tcatcgctct ctaaaagtgg atcatctact      540
cctcaagatg gaggagcagc ttcttcaggg gctccctcag gagatcaatc tatctctgca      600
aacgcttggt tagctaaaag ctatgctgcg agtactgata gctccctgt atctaattct      660
tcagggttcag acgttactgc atcttctgat aatccagact ctctctcatc tggagatagc      720
tctggagact ctgaaggacc gactgagcca gaagctgggt ctacaacaga aactcctact      780
ttaataggag caggwgctat ctatggagaa actgttaaga ttgagaactt ctctggccaa      840
ggaatatatt ctggaacaa agctatcgat aacaccacag aaggctctct ttccaaatct      900
aacgtcctcg gaggtgcggt ctatgctaaa acattgttta atctcgatag cgggagctct      960
agacgaactg tcaccttctc cggaataact gtctcttctc aatctacaac aggtcagggt      1020
gctggaggag ctatctactc tcctactgta accattgcta ctctgtagt attttctaaa      1080
aactctgcaa caaacaatgc taataacgct acagatactc agagaaaaga cacctttgga      1140
ggagctatcg gagctacttc tgctgtttct ctatcaggag gggctcattt cttagaaaac      1200
gttgctgacc tcggatctgc tattgggttg gtgccagaca cacaaaatac agaaacagtg      1260
aaatttagag ctggctccta ctactttgaa aaaaataaag ctttaaaacg agctactatt      1320
tacgcacctg tcgtttccat taaagcctat actgcgacat ttaaccaaaa cagatctcta      1380
gaagaaggaa gcgcgattta ctttacaaaa gaagcatcta ttgagtcttt aggtctctgt      1440
ctcttcacag gaaacttagt aaccccaacg ctaagcaca ctacagaagg cacaccagcc      1500
acaacctcag gagatgtaac aaaaataggt gctgctatct ttggacaaat agcaagctca      1560
aacggatctc agacggataa ccttcccctg aaactcattg cttcaggagg aaatatttgt      1620
ttccgaaaca atgaataccg tcctacttct tctgataccg gaacctctac tttctgtagt      1680
attgcgggag atgttaaat aaccatgcaa gctgcaaaag ggaaaaacg cagtttcttt      1740
gatgcaatcc ggacctctac taagaaaaca ggtacacagg caactgccta cgatactctc      1800
gatattaata aatctgagga ttcagaaaact gtaactctg cgtttacagg aacgattctg      1860
ttctcctctg aattacatga aaataaatcc tatattccac aaaacgtagt tctacacagt      1920
ggatctcttg tattgaagcc aaataccgag cttcatgtca tttcttttga gcagaaagaa      1980
ggctcttctc tcgttatgac acctggatct gttctttcga accagaactg tgctgatgga      2040
gctttggtct aa                                     2052

```

<210> 357

<211> 683

<212> PRT

<213> Chlamydia trachomatis

<400> 357

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Met His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110

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565 570 575
 Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly Thr
 580 585 590
 Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser
 595 600 605
 Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser Glu
 610 615 620
 Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His Ser
 625 630 635 640
 Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe
 645 650 655
 Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val Leu
 660 665 670
 Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val
 675 680

<210> 358
 <211> 1248
 <212> DNA
 <213> Chlamydia

<400> 358
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 gatcctcgct ctctttctcc agaaaaagga gaaaatgctt tccatttttc tttgtccaag 120
 gctttatttg ctactctctt cagagaagag ctctctggat taaccctgc tctggctctcc 180
 tcctatcaag tttcggaaga cgggcgggtt tatcgttttt gtattcgtaa agatgctaag 240
 tggagtgaag gctctctttt acttgcagaa gatgtaatag ctgcttggga acacactaaa 300
 caagctgggc gatattccct actttttgaa aagctatctt ttcgagcctc ttcttcttcg 360
 gaaatcctta ttgaactcaa agaacccgag cctcaactat tggcgatatt agcctctccg 420
 ttttttgctg tgtatcgtcc agaaaatcct tttctttctt ctggaccttt tatgccaaaa 480
 acctatgtgc aaggggcaaac gctcgttcta caaaaaaacc cttattacta tgaccatgag 540
 catgtggaat tacattccat agactttcgc atcattccca acatttacac agctctacac 600
 ctcttaagaa gaggtgacgt ggattgggtg gggcagcctt ggcaccaagg gattcctttt 660
 gagcttcgga ctacctctgc tctctacacc cattaccctg tagatggcac attctggcct 720
 attcttaatc ccaaagatcc tgtactttcc tctctatcta atcgtcagcg attgattgct 780
 gccatccaaa aggaaaaact ggtgaagcaa gctttaggaa cacaatatcg agtagctgaa 840
 agctctccat ctccagaggg aatcatagct catcaagaag cttctactcc ttttctggg 900
 aaaattactt tgatatatcc caataatatt acgcgtgtgc agcgtttggc cgagggtattg 960
 caagaacaat gccgagacgc aggtatccag ctgactcttg aaggactcga ataccatgta 1020
 tttgttcaaa aacgagccac tcaagatttc tctgtctcca cagcaacttc tatagctttc 1080
 catccccttg ctaaatactaa gttcgatcaa acggctctag acaatttcac ttgtctgccc 1140
 ttgtaccaca tagaatatga ttatattttg agcagaccgc tagatcaaat tgttcactat 1200
 ccttcaggta gtgttgattt gacctatgca cactttcact aggaattc 1248

<210> 359
 <211> 1311
 <212> DNA
 <213> Chlamydia

<400> 359
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 ttcctaacgg tcggatgctc cttttctcct ccagaatcgg gcttaatcat agccattcac 120
 gatgatctc gctctctttc tccagaaaaa ggagaaaatg ctttccattt ttctttgtcc 180
 aaggctttat ttgctactct cttcagagaa gagctctctg gattaacccc tgctctggtc 240
 tcctctatc aagtttcgga agacgggcgg ttttatcggt tttgtattcg taaagatgct 300
 aagtggagt acggctctct tttacttgca gaagatgtaa tagctgcttg ggaacacact 360

```

aaacaagctg ggcgatattc cctaacttttt gaaaagctat cttttcgagc ctcttcttct 420
tcggaaatcc ttattgaact caaagaaccc gagcctcaac tattggcgat attagcctct 480
ccgttttttg ctgtgtatcg tccagaaaat ccttttcttt cttctggacc ttttatgcc 540
aaaacctatg tgcaagggca aacgctcggt ctacaaaaaa acccttatta ctatgaccat 600
gcgcatgtgg aattacattc catagacttt cgcattcatt ccaacattta cacagctcta 660
cacctcttaa gaagaggtga cgtggattgg gtggggcagc cttggcacca agggattcct 720
tttgagcttc ggactacctc tgctctctac acccattacc ctgtagatgg cacattctgg 780
cttattctta atcccaaaga tcctgtactt tcctctctat ctaatcgtca gcgattgatt 840
gctgccatcc aaaaggaaaa actggtgaag caagcttttag gaacacaata tcgagtagct 900
gaaagctctc catctccaga gggaatcata gctcatcaag aagcttctac tccttttcct 960
gggaaaatta ctttgatata tcccaataat attacgcgct gtcagcggtt ggccgaggta 1020
ttgcaagaac aatgccgaga cgcaggtatc cagctgactc ttgaaggact cgaataccat 1080
gtatttggtc aaaaacgagc cactcaagat ttctctgtct ccacagcaac ttctatagct 1140
ttccatcccc ttgctaaatc taagttcgat caaacggctc tagacaattt cacttgctcg 1200
cccttgtagc acatagaata tgattatatt ttgagcagac cgctagatca aattgttcac 1260
tatccttcag gtagtggtga tttgacctat gcacactttc actaggaatt c 1311

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<210> 360
 <211> 813
 <212> DNA
 <213> Chlamydia

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<400> 360
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ttcactccca ggaacattga aactttatta ggaggaactg aaataggaaa attcacagtc 480
acacccaaaa gctctgggag catgttctta gtctcagcag atattattgc atcaagaatg 540
gaaggcggcg ttgttctagc ttttggtacga gaaggtgatt ctaagcccta cgcgattagt 600
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ggattgactc cgacaacgta ttcattacgt gtaggcgggt tagaaagcgg tgtgggtatgg 720
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tttttgaggg taataacctc aacaaacgct taa 813

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<210> 361
 <211> 750
 <212> DNA
 <213> Chlamydia

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<400> 361
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gttgtctctt caaagattgt gagtttatgt gaaggcgctg tcgctgatgc aagaatgtgc 180
aaagcagagt tgataaaaaa agaagcggat gcttatttgt tttgtgagaa aagcgggata 240
tatctaacga aaaaagaagg tattttgatt ccttotgcag ggattgatga atcgaatacg 300
gaccagcctt ttgttttata tcctaagat attttgggat cgtgtaatcg catcggagaa 360
tggttaagaa attattttcg agtgaaagag ctaggcgtaa tcattacaga tagccatact 420
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cacaactata taggatcgct agattgtttc ggctgccttc tacagatgac gcaaagtaat 540
cttgtagatg ccttagcagt tgcggctggt gtttgtatgg gagaggggaa tgagcaaaca 600
ccgttagcgg tgatagagca ggcacctaat atggtctacc attcatatcc tacttctcga 660
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gcggttacgt ggagtcaaga aaagaaatag

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<210> 362
 <211> 412
 <212> PRT
 <213> Chlamydia

<400> 362

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Ile	His	Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala
			20					25					30		
Phe	His	Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu
		35					40					45			
Glu	Leu	Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser
	50					55					60				
Glu	Asp	Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp
	65				70					75					80
Ser	Asp	Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu
				85					90					95	
His	Thr	Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser
			100					105					110		
Phe	Arg	Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro
		115					120					125			
Glu	Pro	Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr
	130					135					140				
Arg	Pro	Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr
	145				150					155					160
Tyr	Val	Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr
				165					170					175	
Asp	His	Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro
			180					185					190		
Asn	Ile	Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp
		195					200					205			
Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr
	210					215					220				
Ser	Ala	Leu	Tyr	Thr	His	Tyr	Pro	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile
	225				230					235					240
Leu	Asn	Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu	Ser	Asn	Arg	Gln	Arg
				245					250					255	
Leu	Ile	Ala	Ala	Ile	Gln	Lys	Glu	Lys	Leu	Val	Lys	Gln	Ala	Leu	Gly
		260						265					270		
Thr	Gln	Tyr	Arg	Val	Ala	Glu	Ser	Ser	Pro	Ser	Pro	Glu	Gly	Ile	Ile
		275					280					285			
Ala	His	Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly	Lys	Ile	Thr	Leu	Ile
	290					295					300				
Tyr	Pro	Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu	Ala	Glu	Val	Leu	Gln
	305				310					315					320
Glu	Gln	Cys	Arg	Asp	Ala	Gly	Ile	Gln	Leu	Thr	Leu	Glu	Gly	Leu	Glu
				325					330					335	
Tyr	His	Val	Phe	Val	Gln	Lys	Arg	Ala	Thr	Gln	Asp	Phe	Ser	Val	Ser
			340					345					350		
Thr	Ala	Thr	Ser	Ile	Ala	Phe	His	Pro	Leu	Ala	Lys	Ser	Lys	Phe	Asp
		355					360					365			
Gln	Thr	Ala	Leu	Asp	Asn	Phe	Thr	Cys	Leu	Pro	Leu	Tyr	His	Ile	Glu
	370					375					380				
Tyr	Asp	Tyr	Ile	Leu	Ser	Arg	Pro	Leu	Asp	Gln	Ile	Val	His	Tyr	Pro
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CCF4000

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<210> 363
<211> 433
<212> PRT
<213> Chlamydia
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			20					25					30		
Gly	Leu	Ile	Ile	Ala	Ile	His	Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu
			35				40					45			
Lys	Gly	Glu	Asn	Ala	Phe	His	Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala
	50					55					60				
Thr	Leu	Phe	Arg	Glu	Glu	Leu	Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser
	65				70					75				80	
Ser	Tyr	Gln	Val	Ser	Glu	Asp	Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg
				85					90					95	
Lys	Asp	Ala	Lys	Trp	Ser	Asp	Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val
			100					105					110		
Ile	Ala	Ala	Trp	Glu	His	Thr	Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu
			115				120					125			
Phe	Glu	Lys	Leu	Ser	Phe	Arg	Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile
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Glu	Leu	Lys	Glu	Pro	Glu	Pro	Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro
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Phe	Phe	Ala	Val	Tyr	Arg	Pro	Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro
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Phe	Met	Pro	Lys	Thr	Tyr	Val	Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys
			180					185					190		
Asn	Pro	Tyr	Tyr	Tyr	Asp	His	Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp
			195				200					205			
Phe	Arg	Ile	Ile	Pro	Asn	Ile	Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg
	210					215					220				
Gly	Asp	Val	Asp	Trp	Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe
225					230					235				240	
Glu	Leu	Arg	Thr	Thr	Ser	Ala	Leu	Tyr	Thr	His	Tyr	Pro	Val	Asp	Gly
				245					250					255	
Thr	Phe	Trp	Leu	Ile	Leu	Asn	Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu
			260					265					270		
Ser	Asn	Arg	Gln	Arg	Leu	Ile	Ala	Ala	Ile	Gln	Lys	Glu	Lys	Leu	Val
			275				280					285			
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	290					295					300				
Pro	Glu	Gly	Ile	Ile	Ala	His	Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly
305					310					315					320
Lys	Ile	Thr	Leu	Ile	Tyr	Pro	Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu
				325					330					335	
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			340					345							

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<210> 364
<211> 264
<212> PRT
<213> Chlamydia
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<210> 365
<211> 249
<212> PRT
<213> Chlamydia
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[illegible]

<213> Chlamydia pneumoniae

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cctatagaag	ttcacgaaag	agagtcctgca	aaacaaggta	gagagggtctc	tgcttttagaa	300
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ccattgcagt	atgtaagtgt	tagtgatcgg	cagggaacag	aaatcgtttt	ctaccctgat	540
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gacaaggtta	ccttctttta	tgaggggagg	attcaatctt	ttgtaagtta	cctgaatcaa	720
aataaagaaa	gccttttctc	tgaaccgatt	tatatattgtg	gaactcagat	aggagatgat	780
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tcctatgcc	ataatatcc	tacacgccaa	ggaggaaacg	atcttacagg	gttttctacc	900
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 ctcatcatg tgtcattgaa ggatgcgta gaagcagacc atattttcac tatgttgatg 2340
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 aataatttag atatttag 2418

<210> 367

<211> 888

<212> DNA

<213> Chlamydia pneumoniae

<400> 367

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 ttgacgggaa ggtattataa atatgctgca cgcttggttt ctgattttga tgctccatat 180
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 gctctttttt ccgtggaatc aggagctcct tacggggatc actactatcg cttttcacccg 360
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 gaaagagaga tcctatttga aacgcgctct ttaaaagacg actatgcttt tcctagtttt 480
 gctgcagcaa aagtcttttg actgcgagat gaggtcatca gaattcaaaa ggagctggaa 540
 cgccaagaag cactgacttc agtcgcgacg atgacgttaa tgcgctggcc ctttgacttt 600
 cgctatgcc a tcttggtttt aacagataaa agcgtctcta aaggcaaagc cttagatcgt 660
 gttgtcaata tactttatga tggaaagaaa ccctttgtca tggcttcagg agatgatgct 720
 aatgatctcg atcttattga gagaggagat tttaaaattg tgatgagttc cgcacctgaa 780
 gagatgcacg ttcatgcgga ctttctagct cccccagcag ataagaatgg cattctttca 840
 gcttggaag ctggtgtccg ctattatgac gaccttatga gtcttttag 888

<210> 368

<211> 237

<212> DNA

<213> Chlamydia pneumoniae

<400> 368

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 attaaagaag ttcaggggac tcacacgatt atttatgaac taagtgtagc taaacctgat 120
 atcggaaga tcattggcaa agaaggccgt acgatcaaag cgattcgtac tcttctggtt 180
 tctgtagcaa gcaggaacaa tgtaagggtc agtttagaaa ttatggaaga aaagtag 237

<210> 369

<211> 1437

<212> DNA

<213> Chlamydia pneumoniae

<400> 369

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 tggactttat tccttatgga cgacgggaaa atgcataaag ttgccaatat tgcaggaaga 180
 actatggctc tccatcccca tggcgatgcc cctattgttg aagctcttgt tgtcttagca 240
 aataaaggct acctcatcga cagcgaagga aacttcggaa atccccctac gggagatcct 300
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 aataccgact tgatagcttt tcatgactct tatgatggaa gagaaaaaga acctgatatt 420
 ttacctgcaa agctccccgt gcttttactt catggtgtgg acgggattgc tgtggggatg 480
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 gtcaagtacc tcaaaggact tttagaacgc catggacact taggagagag aaaaacacag 1380
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<210> 370

<211> 774

<212> DNA

<213> Chlamydia pneumoniae

<400> 370

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 acgaggggtg atgggttttt atatttaaag ccctcttctt gtgctgatgc gcaactcatt 180
 atttttaatt ccgatggatc acgtccaacg atgtgtggtg acggcttgcg ttgtgcgatt 240
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 aattttgttc agatactggg acattgccag ttgcgcgttc gtacttacga acgtggagtc 600
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 tcctatggat ggaaggagtc gatccaaatc catacttggg gtggagagct tatgactgtg 720
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<210> 371

<211> 576
 <212> DNA
 <213> Chlamydia pneumoniae

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 ctttggtatt tggaaattaaa agatcctgga aagcctatag tttttgtgat caatagtcct 180
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 gtcactactg ttgtgacagg gttggcagct tctatgggct cgggtattgag tttatgtgca 300
 gctcctggaa ggagatttgc aactcctcat tctagaatta tgattcatca accttcaata 360
 ggtggaccga ttaccgggtca ggcaaccgat ttagacattc atgcgagaga gatttttaaaa 420
 acaaaagctc gcattataga tgtctatgta gaggcgacaa atcaacctcg agatatcata 480
 gaaaaggcta tcgatagaga tatgtggatg acagccaacg aagctaagga ttttggttta 540
 ttggatggca ttttattctc cttcaacgat ctctaa 576

<210> 372
 <211> 699
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 372
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 tattctttgc gggaggctat agatatctta aaacaatgtc ctccagtagc cttcgatcaa 120
 actgtagatg tatctatcaa gttagggata gatcctaaaa agagcgacca acaaattcgt 180
 ggagccggtt ttttacctaa tggtagagga aaaactttaa gaattttggt ttttgcttca 240
 gggaacaaag tcaaagaagc tgttgaagcg ggcgagact ttatgggaag cgacgatctt 300
 gttgaaaaaa ttaaatccgg gtggtctgaa ttcgatgttg ctgtcgctac cccagatatg 360
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 aaaacaggaa cggtaacacc agacgttgct aaagcaatct ccgaattgcg taaaggaaaa 480
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<210> 373
 <211> 369
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 373
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gatatccaag ctcgatgcga caatattaaa aaacaaatcg aagatagcac ttcagattac 1080
gacaaagaaa aactccaaga gcgttttagct aaactctccg gtggtgtcgc cgtaatccgc 1140
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cacgcaacca ttgcagctgt cgaagaagga atcctccctg gtggtggaac tgccttagtt 1260
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gtgactcgct cagctctaga aagcgcagct tctatgcgag gattactcct cacaacagaa 1560
gccttaatcg ctgatatccc agaagagaaa tcttcttcag ctccagcgat gccaaagcgca 1620
ggaatggact actag                                     1635

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<210> 381

<211> 1995

<212> DNA

<213> Chlamydia pneumoniae

<400> 381

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acagacgaaa attcagaagt catagaagtc cctctttacc ccgatacaca ccgcacgggt 180
gcgatttggtc atatagagat cgagggtatt tctgatcaat cgtcttatgc atttcgtggt 240
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gcgaagaata ttcattcccc acagagtttt gggtcgcgaa agaaacaggg ggattatgca 360
ttttgttatt taaaggaaga accatttctt tgggatgggtg atcagcctct gcatttgccg 420
aaagaagaga tgatcatcta tgagatgcat gtacgttctt tcacgcaatc ttcttcatct 480
agggttcatg ctccgggaac ctctctagga atcattgaaa agatcgacca tctgcataag 540
ctgggaatca acgctgttga actcttacct atctttgagt tcgatgagac tgcgcatact 600
tttagaaatt cgaaattccc ttatctgtgc aattattggg gttatgctcc cctaaatttc 660
ttttctcctt gccgacgta tgcttatgcc tctgatcctt gcgctccaag tagagagttt 720
aaaactttag taaagcaact gcacgaagaa ggtattgagg tcattcttga tgttggtttt 780
aatcatacgg gcttgcaagg gacgacctgc tctttgcctt ggatagacac tccgagctat 840
tatattttag atgcacaagg tcaactttaca aattattcag gctgtggaaa cactctcaat 900
acaaaccgcg ccccccagac ccaatggatt ctcgacatct tacgttattg ggtagaagaa 960

```

```

atgcatgtcg atgggttccg atttgatctt gcttctgtct tttctcgtgg tccttcggga 1020
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acaaagatta tagctgagcc ttgggatgct ggcggtttgt atcagggtggg ctatttcccc 1140
acactgtctc caagatggag tgaatggaac ggcccgtatc gtgataacgt gaaagcattt 1200
cttaatgggg atcaaaatct cataggaacc tttgcttcta gaatttcagg atctcaagac 1260
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acgttatgtg acactgtgac ttataaccac aaacataatg aggctaacgg agaggataat 1380
cgtgacggca cagatgcgaa ctacagctac aatttcggaa cggaagggaa aacagaagac 1440
cctggcattc ttgaagtctg tgaagacag ttacgaaatt ttttccttac tttgatggtc 1500
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aacaaccgtt gggctttgga ttcgaatgcg aattacttcc tttgggatca gcttaccgca 1620
aagcctacac tgatgcactt tctctgtgat ctcatcgctt ttcgaaaaaa atataaaaca 1680
ctttttaatc gaggttttct ttccaataag gaaatcagtt gggtagatgc tatgggaaat 1740
cccatgacat ggcgccctgg aaatttctta gcatttaaaa taaaatcgcc aaaagcgcat 1800
gtatatgttg cttttcacgt gggagctcaa gaccaacttg cgaccttacc taaagcctcc 1860
agcaactttc ttcttatca aatagttgcc gagagtcagc aagggtttgt ccctcaaat 1920
gtagcaacgc cgacagtgtc gctacagccc cataccacgc taattgcgat cagccatgcg 1980
aaagaggtta cctga                                     1995

```

<210> 382

<211> 987

<212> DNA

<213> Chlamydia pneumoniae

<400> 382

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atggcattca aagaggctgt tcgtgttgct gtcacaggag gcaaagggca gattgcgtat 60
aattttttat ttgcattagc ccatggagat gtttttgag tggatcgtgg ttagatttta 120
cggatctatg atgtgccggg tacagagaga gctctctcag ggggtcgtat ggagctcgat 180
gacggtgcat atcctctttt acatcgtctg cgtgtgacga catcgtaaaa cgacgctttt 240
gatggtatcg atgcggcggt tctgataggt gctgtgcctc gtggaccggg tatggagcga 300
ggagatcttt taaagcaaaa tggtcagatc ttttcgttac agggggccgc tttaaataca 360
gcagcaaaaa gagatgctaa gatttttggt gtagggaacc ctgtcaatac gaattgctgg 420
attgctatga aacatgctcc cagattgcat cggaaaaatt tccatgcgat gttacgcttg 480
gatcagaatc gcatgcatag catgctcgct catcgtgctg aggttcctct agaggaggtc 540
tcccgtgttg tcatctgggg aaatcattct gcaaagcagg ttcctgactt cacacaagca 600
cgtatctcag ggaaaccggc agccgagggt atcggagatc gagattggtt ggaaaacatt 660
ttagtacact ccgtgcagaa tctgtggaagc gctgtaattg aagcaagagg gaaatcttcg 720
gcagcatccg catctcgagc acttgccgag gccgcgcgat ctattttttg tcctaaaagt 780
gacgagtggg tttcttctgg agtgtgttcg gatcataatc cttatgggat tcctgaagac 840
ttgatttttg gttttccatg tctgtatgtg ccttctggag attatgaaat cattcctgga 900
ttgccttggg agccttttat cagaaataag attcaaat tccctggatga aattgctcag 960
gaaaaagcta gcgtgtcttc gttataa                                     987

```

<210> 383

<211> 654

<212> DNA

<213> Chlamydia pneumoniae

<400> 383

```

atgaaaagag tcatttataa aaccatattt tgcgggttaa ctttacttac aagtttgagt 60
agttgttccc tggatcctaa aggatataac ctagagacaa aaaactcgag ggacttaaat 120
caagagtctg ttatactgaa ggaaaaccgt gaaacacctt ctcttgtaa gagactctct 180
cgctcgttctc gaagactctt cgctcgacgt gatcaaaactc agaaggatac gctgcaagtg 240
caagctaact ttaagacctc cgcagaaaag atttcagagc aggacgaaag agacctttct 300
ttcgttgtct cgtctgctgc agaaaagtct tcaatttcgt tagctttgtc tcagggtgaa 360
attaaggatg ctttgtaccg tatccgagaa gtccaccctc tagctttaat agaagctctt 420
gctgaaaacc ctgccttgat agaagggatg aaaaagatgc aaggccgtga ttggatttgg 480

```

```

aatcttttct taacacaatt aagtgaagta ttttctcaag cttggtctca aggggttata 540
tctgaagaag atatgcgcgc atttgccctc accttagggt tggactccgg gaccgttgcg 600
tccattgtcc aaggggaaag gtggcccag cttgtggata tagtgataac ttaa 654

```

<210> 384

<211> 813

<212> DNA

<213> Chlamydia pneumoniae

<400> 384

```

atgatcataa taaaaaacia tgagctcatg ataagacggt ttttcaaaac gcttttccct 60
ccgggtcctc aatactcttt atgttatgct tcgatcctga tcgttttgag ttcccttggt 120
tgtgttccta cattttgttg gttatttctc cctgaactgt ctttatctaa attcaatcct 180
tctccatta ggaacctatt tttagtttcc tccactctat ccaaagtccc tcctactgcg 240
attgcagaac atttacgtct ttctgcggat gcacctacat atctccatga attctctatt 300
aaagaagctg agtcogagctt gcatgctctt gggatttttt cctctttagt tataaaaaaa 360
tctcctgata ataaggcat tacaattttc tataccttac aaacacctat tgcttatggt 420
gggaaccgat ctaatacgtt atgcaatctc gaggggagct gctttcttgg tcaaccgtac 480
ttcccctctc tgaatctccc tcagattttt ttctctcaag aagatttaaa aatgcaaaaa 540
ctccctaaag aaaaaatgct ttttaccaag attctcttta aggagcttgc tatggaggtct 600
ccgaaaatca ttgattttatc tttatctgat gcataccctg gagaaattat agtgacgctc 660
tcttcaggca gtctgttaag acttccaatt aagaccttag atcgtgcctt agacctgtat 720
aagcacatga aaaaaagtcc tgtaatcgag agcgaaaaac aatatgtcta tgatttgcg 780
tttccaaatt tcttattatt aaaagctcta tga 813

```

<210> 385

<211> 1956

<212> DNA

<213> Chlamydia pneumoniae

<400> 385

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atggttaatc ctatttggtc aggtcctata gacgaaacag aacgcacacc tcccgcagat 60
ctttctgctc aaggattgga ggcgagtgc gcaataaga gtgcggaagc tcaaagaata 120
gcaggtgccg aagctaagcc taaagaatct aagaccgatt ctgtagagcg atggagcatc 180
ttgcgttctg cagtgaatgc tctcatgagt ctggcagata agctgggtat tgcttctagt 240
aacagctcgt cttctactag cagatctgca gacgtggact caacgacagc gaccgcacct 300
acgcctcctc caccacggt tgatgattat aagactcaag cgcaaacagc ttacgatact 360
atctttaacct caacatcact agctgacata caggctgctt tggtagcct ccaggatgct 420
gtcactaata taaaggatac agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
gaaactaaga atgccgatgc agttaaagtt ggcgcgcaaa ttacagaatt agcgaatat 540
gcttcggata accaagcgat tcttgactct ttaggtaaac tgacttcctt cgacctctta 600
caggctgctc ttctccaatc tgtagcaaac aataacaaag cagctgagct tcttaaagag 660
atgcaagata acccagtagt cccaggaaa acgcctgcaa ttgctcaatc tttagttgat 720
cagacagatg ctacagcgac acagatagag aaagatggaa atgcgattag ggatgcata 780
tttgaggagc agaacgctag tggagctgta gaaaatgcta aatctaataa cagtataagc 840
aacatagatt cagctaaagc agcaatcgct actgctaaga cacaatatgc tgaagctcag 900
aaaaagtcc ccgactctcc aattcttcaa gaagcggaac aaatggtaat acaggctgag 960
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gttgagggct ccaagcaaca aggaagtagt attggtagta ttcgtgtttc catgctgtta 1080
gatgatgctg aaaatgagac cgcttccatt ttgatgtctg ggtttcgtca gatgattcac 1140
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aatgatgcga ctcgtgatgt gataaacaat gtaagtaccc ccgctctcac acgatccggt 1560

```

```

cctagagcac gaacagaagc tcgaggacca gaaaaaacag atcaagccct cgctaggggtg 1620
atttctggca atagcagaac tcttgagat gtctatagtc aagtttcggc actacaatct 1680
gtaatgcaga tcatccagtc gaatcctcaa gcgaataatg aggagatcag acaaaagctt 1740
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tctacacaga agttcatagc taaattagaa agtttgtttg ctgaaggatc taggacagca 1860
gctgaaataa aagcactttc ctttgaaacg aactccttgt ttattcagca ggtgctggtc 1920
aatatcggct ctctatattc tggttatctc caataa 1956

```

<210> 386

<211> 805

<212> PRT

<213> *Chlamydia pneumoniae*

<400> 386

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      20                      25                      30

Thr Gly Ile Thr Gly Leu His His Leu Val Tyr Glu Val Val Asp Asn
      35                      40                      45

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val Arg
      50                      55                      60

Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
      65                      70                      75                      80

Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
      85                      90                      95

Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
      100                     105                     110

Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
      115                     120                     125

Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
      130                     135                     140

Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
      145                     150                     155                     160

Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
      165                     170                     175

Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
      180                     185                     190

Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
      195                     200                     205

Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
      210                     215                     220

```

T0340 "CE" T350

Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 225 230 235 240
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 245 250 255
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 260 265 270
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 275 280 285
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 290 295 300
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 305 310 315 320
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 325 330 335
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 340 345 350
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 355 360 365
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 370 375 380
 Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys
 385 390 395 400
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 405 410 415
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 420 425 430
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 435 440 445
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 450 455 460
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 465 470 475 480
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 485 490 495
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 500 505 510
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 515 520 525

Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 530 535 540
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 545 550 555 560
 Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu
 565 570 575
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 580 585 590
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 595 600 605
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 610 615 620
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 625 630 635 640
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 645 650 655
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 660 665 670
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 675 680 685
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 690 695 700
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 705 710 715 720
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 725 730 735
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 740 745 750
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 755 760 765
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 770 775 780
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 785 790 795 800
 Asn Asn Leu Asp Ile
 805

<210> 387

<211> 295

<213> Chlamydia pneumoniae

Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr His Gln
5 10 15

Ser His His Leu Asp Lys Lys Val Tyr Glu Arg Leu Tyr Ala Leu His
20 25 30

Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly Arg Tyr Tyr Lys Tyr
35 40 45

Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro Tyr Leu Leu Gly Cys
50 55 60

Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser Ser Asn Leu Leu Tyr
65 70 75 80

Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile Leu Gln Asp Cys Met
85 90 95

Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser Gly Ala Pro Tyr Gly
100 105 110

Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile Ala Gln Asp Leu His
115 120 125

Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala Lys Glu Arg Glu Ile
130 135 140

Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr Ala Phe Pro Ser Phe
145 150 155 160

Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu Val Ile Arg Ile Gln
165 170 175

Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser Val Ala Thr Met Thr
180 185 190

Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala Ile Leu Phe Leu Thr
195 200 205

Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp Arg Val Val Asn Ile
210 215 220

Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala Ser Gly Asp Asp Ala
225 230 235 240

Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe Lys Ile Val Met Ser
245 250 255

Ser Ala Pro Glu Glu Met His Val His Ala Asp Phe Leu Ala Pro Pro
260 265 270

Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu Ala Gly Val Arg Tyr
275 280 285

<400>	389															
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Ser	Tyr	Val	Ile	Leu	Glu	Arg	Ala	Ile	Pro	His	Ile	Leu	Asp	Gly	Leu	
			20					25					30			
Lys	Pro	Val	Gln	Arg	Arg	Leu	Leu	Trp	Thr	Leu	Phe	Leu	Met	Asp	Asp	
		35					40					45				
Gly	Lys	Met	His	Lys	Val	Ala	Asn	Ile	Ala	Gly	Arg	Thr	Met	Ala	Leu	
	50					55					60					
His	Pro	His	Gly	Asp	Ala	Pro	Ile	Val	Glu	Ala	Leu	Val	Val	Leu	Ala	
65					70					75					80	
Asn	Lys	Gly	Tyr	Leu	Ile	Asp	Thr	Gln	Gly	Asn	Phe	Gly	Asn	Pro	Leu	
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Thr	Gly	Asp	Pro	His	Ala	Ala	Ala	Arg	Tyr	Ile	Glu	Ala	Arg	Leu	Ser	
			100					105					110			
Pro	Leu	Ala	Arg	Glu	Thr	Leu	Phe	Asn	Thr	Asp	Leu	Ile	Ala	Phe	His	
		115					120					125				

Asp 130	Ser	Tyr	Asp	Gly	Arg	Glu 135	Lys	Glu	Pro	Asp	Ile 140	Leu	Pro	Ala	Lys
Leu 145	Pro	Val	Leu	Leu	Leu 150	His	Gly	Val	Asp	Gly 155	Ile	Ala	Val	Gly	Met 160
Thr	Thr	Lys	Ile	Phe 165	Pro	His	Asn	Phe	Ala 170	Glu	Leu	Leu	Lys	Ala 175	Gln
Ile	Ala	Ile	Leu 180	Asn	Asp	Lys	Lys	Phe 185	Thr	Val	Phe	Pro	Asp 190	Phe	Pro
Ser	Gly	Gly 195	Leu	Met	Asp	Pro	Ser 200	Glu	Tyr	Gln	Asp	Gly 205	Leu	Gly	Ser
Ile	Thr 210	Leu	Arg	Ala	Ser	Ile 215	Asp	Ile	Ile	Asn	Asp 220	Lys	Thr	Leu	Val
Val 225	Lys	Gln	Ile	Cys	Pro 230	Gln	Ser	Thr	Thr	Glu 235	Thr	Leu	Ile	Arg	Ser 240
Ile	Glu	Asn	Ala	Ala 245	Lys	Arg	Gly	Thr	Ile 250	Lys	Ile	Asp	Thr	Ile 255	Gln
Asp	Phe	Ser	Thr 260	Asp	Val	Pro	His	Ile 265	Glu	Ile	Lys	Leu	Pro 270	Lys	Gly
Ser	Arg	Ala 275	Lys	Glu	Met	Leu	Pro 280	Leu	Leu	Phe	Glu	His 285	Thr	Glu	Cys
Gln 290	Val	Ile	Leu	Tyr	Ser	Lys 295	Pro	Thr	Val	Ile	Tyr 300	Glu	Asn	Lys	Pro
Val 305	Glu	Cys	Ser	Ile	Ser 310	Glu	Ile	Leu	Lys	Leu 315	His	Thr	Thr	Ala	Leu 320
Gln	Gly	Tyr	Leu	Glu 325	Lys	Glu	Leu	Leu	Leu 330	Leu	Gln	Glu	Gln	Leu 335	Thr
Leu	Asp	His	Tyr 340	His	Lys	Thr	Leu	Glu 345	Tyr	Ile	Phe	Ile	Lys 350	His	Lys
Leu	Tyr	Asp 355	Ser	Val	Arg	Glu	Val 360	Leu	Ala	Ile	Asn	Lys 365	Lys	Ile	Ser
Ala 370	Asp	Asp	Leu	His	Gln	Ala 375	Val	Leu	His	Ala	Leu 380	Glu	Pro	Trp	Leu
His 385	Glu	Leu	Ala	Thr	Pro 390	Val	Thr	Lys	Gln	Asp 395	Thr	Ser	Gln	Leu	Ala 400
Ser	Leu	Thr	Ile	Lys 405	Lys	Ile	Leu	Cys	Phe 410	Asn	Glu	Glu	Ala	Cys 415	Thr
Lys	Glu	Leu	Leu 420	Ala	Ile	Glu	Lys	Lys 425	Gln	Ala	Ala	Ile	Gln 430	Lys	Asp

Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn Ser Tyr Gly Trp
210 215 220

Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu Leu Met Thr Val
225 230 235 240

Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser Val Thr Arg Asp
245 250 255

Leu

<210> 391

<211> 191

<212> PRT

<213> Chlamydia pneumoniae

<400> 391

Met Ala Asp Gly Glu Val His Lys Leu Arg Asp Ile Ile Glu Lys Glu
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Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Lys Asp
35 40 45

Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser Val
50 55 60

Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Leu Thr Ser Pro
65 70 75 80

Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val Leu
85 90 95

Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala Thr Pro His Ser Arg
100 105 110

Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro Ile Thr Gly Gln Ala
115 120 125

Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala Arg
130 135 140

Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln Pro Arg Asp Ile Ile
145 150 155 160

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Ala	Ile	Phe	Ala	Ala	Asp	Ser	Ile	Gln	Ile	Gln	Gln	Cys	Thr	Gly	Thr
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Thr	Leu	Phe	Ser	Gly	Asn	Thr	Ala	Asn	Lys	Ser	Gly	Gly	Gly	Ile	Tyr
		435					440					445			
Ala	Val	Gly	Gln	Val	Thr	Leu	Glu	Asp	Ile	Ala	Asn	Leu	Lys	Met	Thr

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 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
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 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
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 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala Ala
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 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
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 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 580 585 590
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
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 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu
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 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr
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 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
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 660 665 670
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 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn
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 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
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 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp

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 Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg
 785 790 795 800
 Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly
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 865 870 875 880
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 Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn
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 Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr
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Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser	1395		1400		1405
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Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn	1425		1430		1435
Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg	1445		1450		1455
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Val Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His	1490		1495		1500
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Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln	1585		1590		1595
Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys	1605		1610		1615
Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala	1620		1625		1630
Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr	1635		1640		1645
Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu	1650		1655		1660
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 Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln Gln Cys Thr Gly Thr
 Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser Gly Gly Gly Ile Tyr
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 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
 Ser Ala Pro Ile Thr Lys Ala Ser Asn Thr Ala Pro Val Val Ser
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
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 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
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 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn
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 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp
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Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala
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Leu	Lys	Leu	Val	Ser	Arg	Thr	Asn	Ala	Asp	Ser	Lys	Asp	Lys	Ile	Asp		
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Pro Glu Glu Cys Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys
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Val Arg Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val
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Tyr Met Gly Thr Ile Pro Leu Met Thr Asp Lys Gly Thr Phe Ile Ile
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Ile Asn Phe Glu Gln Glu Lys His Ser Lys Gly Asn Ile Leu Phe Ser
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Phe Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp
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Ile Asn Asp Leu Ile Tyr Ile His Ile Asp Arg Lys Lys Arg Arg Arg
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Lys Ile Leu Ala Ile Thr Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp
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 Val Lys Ile Ala Val Asp Ala Asp Glu Asn His Pro Ile Ile Lys Met
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 Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg
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 Ala Leu Lys Tyr Leu Ile Arg Leu Lys Met Gly Asp Glu Lys Ala Cys
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 Val Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395
 Glu Leu Ile Gln Asn Gln Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
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 Thr Pro Gly Lys Val Val Ser Ala Lys Gly Leu Ala Ser Val Leu Lys
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Leu 625	Met	Gly	Ser	Asn	Met 630	Gln	Arg	Gln	Ala	Val 635	Pro	Leu	Leu	Lys	Thr 640
Glu	Ala	Pro	Val 645	Val	Gly	Thr	Gly	Leu	Glu 650	Cys	Arg	Ala	Ala	Lys 655	Asp
Ser	Gly	Ala	Ile 660	Val	Val	Ala	Glu	Glu 665	Asp	Gly	Val	Val	Asp 670	Phe	Val
Asp	Gly	Tyr 675	Lys	Val	Val	Val	Ala 680	Ala	Lys	His	Asn	Pro 685	Thr	Ile	Lys
Arg	Thr 690	Tyr	His	Leu	Lys	Lys 695	Phe	Leu	Arg	Ser	Asn 700	Ser	Gly	Thr	Cys
Ile 705	Asn	Gln	Gln	Pro	Leu 710	Cys	Ala	Val	Gly	Asp 715	Val	Ile	Thr	Lys	Gly 720
Asp	Val	Ile	Ala 725	Asp	Gly	Pro	Ala	Thr	Asp 730	Arg	Gly	Glu	Leu	Ala 735	Leu
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Thr	Ser 770	Ile	Tyr	Ile	Glu	Glu 775	Phe	Glu	Leu	Thr	Ala 780	Arg	Asp	Thr	Lys
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865					870					875					880
Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp
				885					890					895	
Leu	Gln	Lys	Gly	Tyr	Lys	Asn	Gln	Val	Ala	Thr	Leu	Lys	Thr	Glu	Tyr
			900					905					910		
Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala
			915					920				925			
Ile	Ile	His	Arg	Arg	Thr	Ala	Glu	Ile	Val	Val	His	Glu	Gly	Leu	Leu
			930					935				940			
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Arg	Ile	Glu	Gln	Glu	Asp	Leu	Val	Asp
945					950					955					960
Leu	Leu	Met	Pro	Asn	Cys	Glu	Met	Tyr	Glu	Val	Leu	Lys	Gly	Leu	Leu
				965					970					975	
Ser	Asp	Tyr	Glu	Thr	Ala	Leu	Gln	Arg	Leu	Glu	Ile	Asn	Tyr	Lys	Thr
			980					985					990		
Glu	Val	Glu	His	Ile	Arg	Glu	Gly	Asp	Ala	Asp	Leu	Asp	His	Gly	Val
			995					1000					1005		
Ile	Arg	Gln	Val	Lys	Val	Tyr	Val	Ala	Ser	Lys	Arg	Lys	Leu	Gln	Val
			1010					1015					1020		
Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly	Val	Val	Ser	Lys
1025					1030					1035					1040
Ile	Val	Pro	Glu	Ala	Asp	Met	Pro	Tyr	Leu	Ser	Asn	Gly	Glu	Thr	Val
				1045					1050					1055	
Gln	Met	Ile	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg	Met	Asn	Leu	Gly
			1060					1065					1070		
Gln	Val	Leu	Glu	Thr	His	Leu	Gly	Tyr	Ala	Ala	Lys	Thr	Ala	Gly	Ile
			1075					1080					1085		
Tyr	Val	Lys	Thr	Pro	Val	Phe	Glu	Gly	Phe	Pro	Glu	Gln	Arg	Ile	Trp
			1090					1095					1100		
Asp	Met	Met	Ile	Glu	Gln	Gly	Leu	Pro	Glu	Asp	Gly	Lys	Ser	Phe	Leu
1105					1110					1115					1120
Tyr	Asp	Gly	Lys	Thr	Gly	Glu	Arg	Phe	Asp	Asn	Lys	Val	Val	Ile	Gly
				1125					1130					1135	
Tyr	Ile	Tyr	Met	Leu	Lys	Leu	Ser	His	Leu	Ile	Ala	Asp	Lys	Ile	His

1140 1145 1150

Ala Arg Ser Ile Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly
1155 1160 1165

Gly Lys Ala Gln Met Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp
1170 1175 1180

Ala Leu Glu Ala Tyr Gly Val Ala His Met Leu Gln Glu Ile Leu Thr
1185 1190 1195 1200

Val Lys Ser Asp Asp Val Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile
1205 1210 1215

Val Lys Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn
1220 1225 1230

Val Leu Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met
1235 1240 1245

Val Val Asp Ala
1250

<210> 397
<211> 224
<212> PRT
<213> Chlamydia pneumoniae

<400> 397

Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
5 10 15

Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
20 25 30

Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
35 40 45

Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
50 55 60

Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
65 70 75 80

Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
85 90 95

Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
100 105 110

Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
115 120 125

Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
130 135 140

Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu
180 185 190

Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu
 195 200 205
 Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln
 210 215 220
 Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile
 225 230 235 240
 Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp
 245 250 255
 Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu
 260 265 270
 Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr
 275 280 285
 Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr
 290 295 300
 Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val
 305 310 315 320
 Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser
 325 330 335
 Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly
 340 345 350
 Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly
 355 360 365
 Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495

Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu
500 505 510

Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala
515 520 525

Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr
530 535 540

Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
545 550 555

<210> 399

<211> 461

<212> PRT

<213> Chlamydia pneumoniae

<400> 399

Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly
5 10 15

Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu
20 25 30

Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
35 40 45

Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys
50 55 60

His Ala Glu Gln Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr
65 70 75 80

Pro Ala Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln
85 90 95

Gly Leu Glu Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Leu Lys Gly
100 105 110

Thr Gly Ser Leu Val Ser Ser Thr Glu Val Lys Val Ile Gly Gln Asp
115 120 125

Thr Thr Ile Ile Lys Ala Asn His Ile Ile Leu Ala Thr Gly Ser Glu
130 135 140

Pro Arg Pro Phe Pro Gly Val Pro Phe Ser Ser Arg Ile Leu Ser Ser
145 150 155 160

Thr Gly Ile Leu Glu Leu Glu Val Leu Pro Lys Lys Leu Ala Ile Ile
165 170 175

Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
180 185 190

Gly Val Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val

195					200					205					
Asn	Asn	Lys	Glu	Val	Ser	Gln	Thr	Val	Thr	Asn	Lys	Phe	Thr	Lys	Gln
	210					215					220				
Gly	Ile	Arg	Ile	Leu	Thr	Lys	Ala	Ser	Ile	Ser	Ala	Ile	Glu	Glu	Ser
225					230					235					240
Gln	Asn	Gln	Val	Arg	Ile	Thr	Val	Asn	Asp	Gln	Val	Glu	Glu	Phe	Asp
				245					250					255	
Tyr	Val	Leu	Val	Ala	Ile	Gly	Arg	Gln	Phe	Asn	Thr	Ala	Ser	Ile	Gly
			260					265					270		
Leu	Asp	Asn	Ala	Gly	Val	Ile	Arg	Asp	Asp	Arg	Gly	Val	Ile	Pro	Val
		275					280					285			
Asp	Glu	Thr	Met	Arg	Thr	Asn	Val	Pro	Asn	Ile	Tyr	Ala	Ile	Gly	Asp
	290					295					300				
Ile	Thr	Gly	Lys	Trp	Leu	Leu	Ala	His	Val	Ala	Ser	His	Gln	Gly	Val
305					310					315					320
Ile	Ala	Ala	Lys	Asn	Ile	Ser	Gly	His	His	Glu	Val	Met	Asp	Tyr	Ser
				325					330					335	
Ala	Ile	Pro	Ser	Val	Ile	Phe	Thr	His	Pro	Glu	Ile	Ala	Met	Val	Gly
			340					345					350		
Leu	Ser	Leu	Gln	Glu	Ala	Glu	Gln	Gln	Asn	Leu	Pro	Ala	Lys	Leu	Thr
		355					360					365			
Lys	Phe	Pro	Phe	Lys	Ala	Ile	Gly	Lys	Ala	Val	Ala	Leu	Gly	Ala	Ser
	370					375					380				
Asp	Gly	Phe	Ala	Ala	Ile	Val	Ser	His	Glu	Ile	Thr	Gln	Gln	Ile	Leu
385					390					395					400
Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile	Gly	Glu	Met
				405					410					415	
Thr	Leu	Ala	Ile	Arg	Asn	Glu	Leu	Thr	Leu	Pro	Cys	Ile	Tyr	Glu	Thr
			420					425					430		
Val	His	Ala	His	Pro	Thr	Leu	Ser	Glu	Val	Trp	Ala	Glu	Gly	Ala	Leu
		435					440					445			
Leu	Ala	Thr	Asn	His	Pro	Leu	His	Phe	Pro	Pro	Lys	Ser			
	450					455					460				

<210> 400

<211> 544

<212> PRT

<213> Chlamydia pneumoniae

<400> 400

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Lys Lys Ile
 5 10 15
 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp
 210 215 220
 Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val
 225 230 235 240
 Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly
 245 250 255
 Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg
 260 265 270
 Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Glu Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu
 290 295 300

Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
305 310 315 320

Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
325 330 335

Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
340 345 350

Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
355 360 365

Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
370 375 380

Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
385 390 395 400

His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
405 410 415

Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
420 425 430

Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
435 440 445

Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
450 455 460

Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
465 470 475 480

Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
485 490 495

Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
500 505 510

Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
515 520 525

Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
530 535 540

<210> 401

<211> 664

<212> PRT

<213> Chlamydia pneumoniae

<400> 401

Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu Gly Ala
5 10 15

Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala Ser Gln
20 25 30

Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu Ile Ala
645 650 655

Ile Ser His Ala Lys Glu Val Thr
660

<210> 402

<211> 328

<212> PRT

<213> Chlamydia pneumoniae

<400> 402

Met Ala Phe Lys Glu Val Val Arg Val Ala Val Thr Gly Gly Lys Gly
5 10 15

Gln Ile Ala Tyr Asn Phe Leu Phe Ala Leu Ala His Gly Asp Val Phe
20 25 30

Gly Val Asp Arg Gly Val Asp Leu Arg Ile Tyr Asp Val Pro Gly Thr
35 40 45

Glu Arg Ala Leu Ser Gly Val Arg Met Glu Leu Asp Asp Gly Ala Tyr
50 55 60

Pro Leu Leu His Arg Leu Arg Val Thr Thr Ser Leu Asn Asp Ala Phe
65 70 75 80

Asp Gly Ile Asp Ala Ala Phe Leu Ile Gly Ala Val Pro Arg Gly Pro
85 90 95

Gly Met Glu Arg Gly Asp Leu Leu Lys Gln Asn Gly Gln Ile Phe Ser
100 105 110

Leu Gln Gly Ala Ala Leu Asn Thr Ala Ala Lys Arg Asp Ala Lys Ile
115 120 125

Phe Val Val Gly Asn Pro Val Asn Thr Asn Cys Trp Ile Ala Met Lys
130 135 140

His Ala Pro Arg Leu His Arg Lys Asn Phe His Ala Met Leu Arg Leu
145 150 155 160

Asp Gln Asn Arg Met His Ser Met Leu Ala His Arg Ala Glu Val Pro
165 170 175

Leu Glu Glu Val Ser Arg Val Val Ile Trp Gly Asn His Ser Ala Lys
180 185 190

Gln Val Pro Asp Phe Thr Gln Ala Arg Ile Ser Gly Lys Pro Ala Ala
195 200 205

Glu Val Ile Gly Asp Arg Asp Trp Leu Glu Asn Ile Leu Val His Ser
210 215 220

Val Gln Asn Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser

225 230 235 240

Ala Ala Ser Ala Ser Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Phe
 245 250 255

Cys Pro Lys Ser Asp Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His
 260 265 270

Asn Pro Tyr Gly Ile Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg
 275 280 285

Met Leu Pro Ser Gly Asp Tyr Glu Ile Ile Pro Gly Leu Pro Trp Glu
 290 295 300

Pro Phe Ile Arg Asn Lys Ile Gln Ile Ser Leu Asp Glu Ile Ala Gln
305 310 315 320

Glu Lys Ala Ser Val Ser Ser Leu
 325

<210> 403

<211> 217

<212> PRT

<213> Chlamydia pneumoniae

<400> 403

Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu Thr Leu Leu
 5 10 15

Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu
 20 25 30

Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu
 35 40 45

Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg
50 55 60

Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val
65 70 75 80

Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu
 85 90 95

Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile
100 105 110

Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile
115 120 125

Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro
130 135 140

Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp
145 150 155 160

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<210> 404
<211> 270
<212> PRT
<213> Chlamydia pneumoniae
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<400>	404															
Met	Ile	Ile	Ile	Lys 5	Asn	Asn	Glu	Leu	Met 10	Ile	Arg	Arg	Phe	Phe 15	Lys	
Thr	Leu	Phe	Pro 20	Pro	Gly	Pro	Gln	Tyr 25	Ser	Leu	Cys	Tyr	Ala 30	Ser	Ile	
Leu	Ile	Val 35	Leu	Ser	Ser	Leu	Val 40	Cys	Val	Pro	Thr	Phe 45	Cys	Trp	Leu	
Phe	Leu 50	Pro	Glu	Leu	Ser	Leu 55	Ser	Lys	Phe	Asn	Pro 60	Ser	Pro	Ile	Arg	
Asn 65	Leu	Phe	Leu	Val	Ser 70	Ser	Thr	Leu	Ser	Lys 75	Val	Pro	Pro	Thr	Ala 80	
Ile	Ala	Glu	His	Leu 85	Arg	Leu	Ser	Ala	Asp 90	Ala	Pro	Thr	Tyr	Leu 95	His	
Glu	Phe	Ser	Ile 100	Lys	Glu	Ala	Glu	Ser 105	Ser	Leu	His	Ala	Leu 110	Gly	Ile	
Phe	Ser	Ser 115	Leu	Val	Ile	Glu	Lys 120	Ser	Pro	Asp	Asn	Lys 125	Gly	Ile	Thr	
Ile	Phe 130	Tyr	Thr	Leu	Gln	Thr 135	Pro	Ile	Ala	Tyr	Val 140	Gly	Asn	Arg	Ser	
Asn 145	Thr	Leu	Cys	Asn 150	Leu	Glu	Gly	Ser	Cys	Phe 155	Leu	Gly	Gln	Pro	Tyr 160	
Phe	Pro	Ser	Leu	Asn 165	Leu	Pro	Gln	Ile	Phe 170	Phe	Ser	Gln	Glu	Asp 175	Leu	
Lys	Met	Gln	Lys 180	Leu	Pro	Lys	Glu	Lys 185	Met	Leu	Phe	Thr	Lys 190	Ile	Leu	
Leu	Lys	Glu 195	Leu	Ala	Met	Glu	Ser 200	Pro	Lys	Ile	Ile	Asp 205	Leu	Ser	Leu	

Ser Asp Ala Tyr Pro Gly Glu Ile Ile Val Thr Leu Ser Ser Gly Ser
210 215 220

Leu Leu Arg Leu Pro Ile Lys Thr Leu Asp Arg Ala Leu Asp Leu Tyr
225 230 235 240

Lys His Met Lys Lys Ser Pro Val Ile Glu Ser Glu Lys Gln Tyr Val
245 250 255

Tyr Asp Leu Arg Phe Pro Asn Phe Leu Leu Leu Lys Ala Leu
260 265 270

<210> 405

<211> 651

<212> PRT

<213> Chlamydia pneumoniae

<400> 405

Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu Arg Thr
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Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala Ala Asn
20 25 30

Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
35 40 45

Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
50 55 60

Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
65 70 75 80

Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
85 90 95

Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
100 105 110

Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
115 120 125

Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
130 135 140

Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp
145 150 155 160

Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile Thr Glu
165 170 175

Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser Leu Gly
180 185 190

Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val

195					200					205					
Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp	Asn
210					215					220					
Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val	Asp
225				230					235						240
Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala	Ile
				245					250					255	
Arg	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu	Asn
			260					265					270		
Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala	Ala
		275					280					285			
Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe	Pro
	290					295					300				
Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala	Glu
305				310						315					320
Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro	Asn
				325					330					335	
Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile	Gly
			340					345					350		
Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr	Ala
		355					360					365			
Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn	Thr
	370					375					380				
Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln	Ala
385				390					395						400
Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu	Ala
				405					410					415	
Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln	Gln
			420					425					430		
Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val	Val
		435					440					445			
Ser	Ala	Gly	Val	Pro	Pro	Ala	Ala	Ala	Ser	Ser	Ile	Gly	Ser	Ser	Val
	450					455					460				
Lys	Gln	Leu	Tyr	Lys	Thr	Ser	Lys	Ser	Thr	Gly	Ser	Asp	Tyr	Lys	Thr
465				470						475					480
Gln	Ile	Ser	Ala	Gly	Tyr	Asp	Ala	Tyr	Lys	Ser	Ile	Asn	Asp	Ala	Tyr
				485					490					495	
Gly	Arg	Ala	Arg	Asn	Asp	Ala	Thr	Arg	Asp	Val	Ile	Asn	Asn	Val	Ser

510

Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln
645 650

<213> Chlamydia trachomatis serovar D

gtgcgtaaaa	ctgtcattgt	tgctatgtct	ggaggagtgg	attcctcggt	tgttgcttat	60
ctcttaaaga	agcaagggga	gtataatggt	ggtgggctct	tcatgaaaa	ttggggagag	120
caggacgaga	atggtgagt	tactgcaacc	aaagattttc	gcgatgtaga	gcggatcgca	180
gaacaattgt	ccattccata	ttacacagtt	tccttttcta	aggaatataa	agagcgagt	240
ttttctagat	ttctaagaga	atatgcgaac	ggctacactc	ccaatcctga	tgtgttatgc	300
aatcgagaaa	tcaaatttga	tttattacag	aagaaggta	gtgagctaaa	aggtgatttt	360
ttagccacgg	gacattattg	tcgaggagg	gctgatggaa	ctggtttgct	cagaggaata	420
gtacccaata	aagaccaaa	ttatttctta	tgtggcactc	ctaaggatgc	tttatccaat	480
gactctttcc	ccctgggagg	tatgtataaa	acggaggta	gtcgaattgc	tcaagaagct	540
ggtttagcta	ccgccacaaa	aaaagatagc	acagggattt	gcttcattgg	taaacggcct	600
tttaagagtt	tccttgagca	gtttgtagca	gactctcctg	gagacattat	tgattttgat	660
acacaacagg	tagtcggccg	acatgaagga	gccattatt	atacgattgg	acagcgctga	720
gggttaaaca	taggaggaat	ggaaaagcct	tgttatgttc	ttagcaagaa	tatggaaaag	780
aatattgttt	acattgtaag	gggtgaagat	catcctttac	tttatcgaca	agagctttta	840
gctaaggaac	ttaattggtt	tgttcccttg	caggagccta	tgatctgat	tgctaaagtt	900
cgtatcagat	ccctgcagca	gaaatgttct	gtatatcctt	tggaagtatg	aacggtaaaa	960
gtgattttcg	atgtccctgt	gaagctgtc	accctggac	agactgtagc	tttctaccag	1020
ggggacattt	gtttaggagg	aggagtgatt	gaagtgccta	tgattcatca	gctg	1074

<210> 407

<211> 1827

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 407

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<210> 408

<211> 804

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 408

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<210> 409
 <211> 663
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 410
 <211> 1470
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 411
 <211> 234
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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 atcggtaaaa ttatcggtaa agaaggacgc actattaagg ctatccgtac tttatttggtt 180
 tccgtagcaa gtcgagataa tgtgaaagtc agcctagaaa ttatggaaga gcgg 234

<210> 412
 <211> 1941
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 412
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<210> 413
 <211> 693
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 414

<211> 1599

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 414

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<210> 415

<211> 1395

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 415

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<210> 416
<211> 366
<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 417
<211> 1659
<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 418

<211> 576

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 418

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<210> 419

<211> 825

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 419

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aacattaact ccgaagatct gaaaaaacat agtttcagca cacgacctcc agcaggagga 1920
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<210> 423

<211> 978

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 423

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caagttgtgg tttggggaaa tcaactccgc aaacaagtgc ctgattttac gcaagctctg 600
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<210> 424

<211> 696

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 424

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acggttgatg tgtctgttaa attagggatc gatccaagaa agagtgatca gcaaattcgt 180
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atgagagagg tcggaaagct aggaaaagtt ttgggtccaa gaaaccttat gcctacgcct 420
aaagccggaa ctgtaacaac agatgtggtt aaaactgttg cggaactgcg aaaaggtaaa 480
attgaattta aagctgatcg agctggtgta tgcaacgtcg gagttgcgaa gctttctttc 540
gatagtcgcg aaatcaaaga aaatgctgaa gcgttggtgt cagccttagt taaagctaaa 600
cccgaactg ctaaaggaca atatttagtt aatttcacta tttcctcgac catggggcca 660
ggggttaccg tggatactag ggagttgatt gcgtta

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<210> 425

<211> 3756

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 425

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gaagagcgag aaaacattgg tttagaagaa gtcttcagag aaattttccc tatcaagtct 180
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ctagggcttg atgttcgccc tatggtagta gatgct 3756

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<210> 426

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 426

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atgttgaaaa ttgatttaac aggaaaaaatt gctttcatag ccggcatagg cgatgataac 60
gggtatggct ggggcattgc caaaatgtta gcagaagcag gcgcaaccat acttgtgggg 120
acctgggttc ctatctataa aattttctct caatcttttg agttaggaaa attcaatgca 180

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<210> 427
<211> 894
<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 428
<211> 459
<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 429
<211> 1707
<212> DNA
<213> Chlamydia trachomatis serovar D
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<400> 429
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aagaaagttt ctctttctat taaagagttc cttgttcatg ggggagatgc tggtcacgat 1680
gcggaagaag aatcttctga cagagac 1707

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<210> 430

<211> 1998

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 430

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<210> 431

<211> 609

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 431

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Leu Leu Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Gln Gly Glu
      20              25              30

Ser Leu Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His
      35              40              45

Leu Leu Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu
      50              55              60

Gly Trp Asp Leu Val Gln Ser Ser Val Ser Ala Gln Gln Lys Leu Arg
      65              70              75              80

Thr Gln Glu Asn Pro Ser Thr Ser Phe Cys Gln Gln Val Leu Ala Asp
      85              90              95

Phe Ile Gly Gly Leu Asn Asp Phe His Ala Gly Val Thr Phe Phe Ala
      100             105             110

Ile Glu Ser Ala Tyr Leu Pro Tyr Thr Val Gln Lys Ser Ser Asp Gly
      115             120             125

Arg Phe Tyr Phe Val Asp Ile Met Thr Phe Ser Ser Glu Ile Arg Val
      130             135             140

Gly Asp Glu Leu Leu Glu Val Asp Gly Ala Pro Val Gln Asp Val Leu
      145             150             155             160

Ala Thr Leu Tyr Gly Ser Asn His Lys Gly Thr Ala Ala Glu Glu Ser
      165             170             175

Ala Ala Leu Arg Thr Leu Phe Ser Arg Met Ala Ser Leu Gly His Lys
      180             185             190

Val Pro Ser Gly Arg Thr Thr Leu Lys Ile Arg Arg Pro Phe Gly Thr
      195             200             205

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Thr Arg Glu Val Arg Val Lys Trp Arg Tyr Val Pro Glu Gly Val Gly
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 Asp Leu Ala Thr Ile Ala Pro Ser Ile Arg Ala Pro Gln Leu Gln Lys
 225 230 235 240
 Ser Met Arg Ser Phe Phe Pro Lys Lys Asp Asp Ala Phe His Arg Ser
 245 250 255
 Ser Ser Leu Phe Tyr Ser Pro Met Val Pro His Phe Trp Ala Glu Leu
 260 265 270
 Arg Asn His Tyr Ala Thr Ser Gly Leu Lys Ser Gly Tyr Asn Ile Gly
 275 280 285
 Ser Thr Asp Gly Phe Leu Pro Val Ile Gly Pro Val Ile Trp Glu Ser
 290 295 300
 Glu Gly Leu Phe Arg Ala Tyr Ile Ser Ser Val Thr Asp Gly Asp Gly
 305 310 315 320
 Lys Ser His Lys Val Gly Phe Leu Arg Ile Pro Thr Tyr Ser Trp Gln
 325 330 335
 Asp Met Glu Asp Phe Asp Pro Ser Gly Pro Pro Pro Trp Glu Glu Phe
 340 345 350
 Ala Lys Ile Ile Gln Val Phe Ser Ser Asn Thr Glu Ala Leu Ile Ile
 355 360 365
 Asp Gln Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu
 370 375 380
 Leu Ser Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met
 385 390 395 400
 Ile Leu Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu
 405 410 415
 Leu Glu Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp
 420 425 430
 Asn Met Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys
 435 440 445
 Ser Phe Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu
 450 455 460
 Leu Ser Thr Pro Ile Pro Leu Phe Gly Phe Glu Lys Ile His Pro His
 465 470 475 480
 Pro Arg Val Gln Tyr Ser Lys Pro Ile Cys Val Leu Ile Asn Glu Gln
 485 490 495
 Asp Phe Ser Cys Ala Asp Phe Phe Pro Val Val Leu Lys Asp Asn Asp
 500 505 510

Arg Ala Leu Ile Val Gly Thr Arg Thr Ala Gly Ala Gly Gly Phe Val
 515 520 525

Phe Asn Val Gln Phe Pro Asn Arg Thr Gly Ile Lys Thr Cys Ser Leu
 530 535 540

Thr Gly Ser Leu Ala Val Arg Glu His Gly Ala Phe Ile Glu Asn Ile
 545 550 555 560

Gly Val Glu Pro His Ile Asp Leu Pro Phe Thr Ala Asn Asp Ile Arg
 565 570 575

Tyr Lys Gly Tyr Ser Glu Tyr Leu Asp Lys Val Lys Lys Leu Val Cys
 580 585 590

Gln Leu Ile Asn Asn Asp Gly Thr Ile Ile Leu Ala Glu Asp Gly Ser
 595 600 605

Phe

<210> 432

<211> 268

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 432

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Phe Ala Lys Gly Pro Asn Tyr Ser Leu Pro Tyr Ala Phe Leu Cys Ile
 20 25 30

Phe Val Ser Val Leu Val Phe Leu Pro Ile Gly Leu Trp Leu Thr Leu
 35 40 45

Pro Ser Phe Leu Asn Phe Lys His Ser Leu Thr Pro Ile Lys Thr Leu
 50 55 60

Phe Leu Thr Cys Thr Glu Pro Pro Cys Leu Pro Glu Pro Phe Phe Ser
 65 70 75 80

Asp Ile Leu His Leu Ser Ala Asp Ser Pro Pro Ala Leu Gln Thr Phe
 85 90 95

Ser Thr Lys Ser Ala Glu His Phe Leu Asn Glu Leu Gly Val Phe Ser
 100 105 110

Phe Ile Ser Ile Glu Lys Val Pro Asp His Lys Gly Leu Ala Ile Ser
 115 120 125

Tyr Ala Leu His Thr Pro Leu Ala Phe Leu Gly Asn Gln Thr His Thr
 130 135 140

Phe Ile Gly Tyr Glu Gly Gln Thr Phe Pro Ala Leu Pro Phe Phe Gln

145 150 155 160
 Ser Leu Glu Leu Pro Thr Val Phe Phe Ser Gln Gln Ala Leu Ser Gln
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 Thr Arg Ile Pro His Gln Thr Leu Ser Ile Val Thr Ser Leu Ile Asp
 180 185 190
 Gln Leu Gln Met Asp Pro Pro Ser Ile Ile Asp Leu Ser Gln Ile Asp
 195 200 205
 His Tyr Pro Gly Glu Phe Val Val Ser Leu Ser Ser Gly Thr Leu Leu
 210 215 220
 Arg Phe Arg Lys Asp Ser Phe Leu Pro Gly Ile Gln His Tyr Gln Gln
 225 230 235 240
 Ala Leu Ser Leu Gly Ala Phe Ser Pro Gln Gln Ala Val Ile Cys Asp
 245 250 255
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 260 265

 <210> 433
 <211> 221
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 433
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 20 25 30
 Thr Leu Ala Lys Asn Thr Ala Glu Ile Lys Glu Glu Ser Val Thr Leu
 35 40 45
 Arg Glu Lys Pro Asp Ala Gly Cys Lys Lys Lys Ser Ser Cys Tyr Leu
 50 55 60
 Arg Lys Phe Phe Ser Arg Lys Lys Pro Lys Glu Lys Thr Glu Pro Val
 65 70 75 80
 Leu Pro Asn Phe Lys Ser Tyr Ala Asp Pro Met Thr Asp Ser Glu Arg
 85 90 95
 Lys Asp Leu Ser Phe Val Val Ser Ala Ala Ala Asp Lys Ser Ser Ile
 100 105 110
 Ala Leu Ala Met Ala Gln Gly Glu Ile Lys Gly Ala Leu Ser Arg Ile
 115 120 125
 Arg Glu Ile His Pro Leu Ala Leu Leu Gln Ala Leu Ala Glu Asp Pro
 130 135 140

Ala Leu Ile Ala Gly Met Lys Lys Met Gln Gly Arg Asp Trp Val Trp
145 150 155 160

Asn Ile Phe Ile Thr Glu Leu Ser Lys Val Phe Ser Gln Ala Ala Ser
165 170 175

Leu Gly Ala Phe Ser Val Ala Asp Val Ala Ala Phe Ala Ser Thr Leu
180 185 190

Gly Leu Asp Ser Gly Thr Val Thr Ser Ile Val Asp Gly Glu Arg Trp
195 200 205

Ala Glu Leu Ile Asp Val Val Ile Gln Asn Pro Ala Ile
210 215 220

<210> 434

<211> 490

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 434

Met Ser Asp Leu Ser Asp Leu Phe Lys Thr His Phe Thr Gln Tyr Ala
5 10 15

Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Val Leu Asp Gly Leu
20 25 30

Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Arg Met Asp Asp
35 40 45

Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
50 55 60

His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala
65 70 75 80

Asn Lys Gly Phe Leu Ile Glu Thr Gln Gly Asn Phe Gly Asn Pro Leu
85 90 95

Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser
100 105 110

Pro Leu Ala Lys Glu Val Leu Phe Asn Thr Asp Leu Met Thr Phe His
115 120 125

Asp Ser Tyr Asp Gly Arg Glu Gln Glu Pro Asp Ile Leu Ala Ala Lys
130 135 140

Ile Pro Leu Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met
145 150 155 160

Thr Thr Lys Ile Phe Pro His Asn Phe Cys Asp Leu Leu Glu Ala Gln
165 170 175

Ile Ala Ile Leu Asn Asp Gln Pro Phe Ser Leu Leu Pro Asp Phe Pro
180 185 190

Pro Gly Gly Thr Met Asp Ala Ser Asp Tyr Gln Asp Gly Leu Gly Ser
 195 200 205
 Ile Val Leu Arg Ala Thr Ile Asp Ile Ile Asn Asp Lys Thr Leu Leu
 210 215 220
 Ile Lys Glu Ile Cys Pro Ser Thr Thr Thr Glu Thr Leu Ile Arg Ser
 225 230 235 240
 Ile Glu Asn Ala Ala Lys Arg Gly Ile Ile Lys Ile Asp Ser Ile Gln
 245 250 255
 Asp Phe Ser Thr Asp Leu Pro His Ile Glu Ile Lys Leu Pro Lys Gly
 260 265 270
 Ile Tyr Ala Lys Asp Leu Leu Arg Pro Leu Tyr Thr His Thr Glu Cys
 275 280 285
 Gln Val Ile Leu Thr Ser Arg Pro Thr Ala Ile Tyr Gln Gly Lys Pro
 290 295 300
 Trp Glu Thr Thr Ile Ser Glu Ile Leu Arg Leu Gln Thr Lys Thr Leu
 305 310 315 320
 Gln Asn Tyr Leu Lys Lys Glu Leu Leu Ile Leu Glu Asp Ser Leu Ser
 325 330 335
 Arg Glu Leu Tyr His Lys Thr Leu Glu Tyr Leu Phe Ile Lys His Lys
 340 345 350
 Leu Tyr Asp Thr Val Arg Ser Met Leu Ser Lys Arg Lys Thr Ser Pro
 355 360 365
 Ser Ser Ser Thr Ile His Asn Ala Val Leu Glu Ala Leu Thr Pro Phe
 370 375 380
 Leu Asp Thr Leu Pro Ala Pro Asp Lys Gln Ala Thr Ala Gln Leu Ala
 385 390 395 400
 Ala Leu Thr Ile Lys Lys Ile Leu Cys Phe Asp Glu Asn Ser Tyr Glu
 405 410 415
 Lys Glu Leu Ala Cys Leu Glu Lys Lys Arg Ser Ser Val Gln Lys Asp
 420 425 430
 Leu Ser Gln Leu Lys Lys Tyr Thr Val Leu Tyr Ile Lys Lys Leu Leu
 435 440 445
 Glu Thr Tyr Arg Gln Leu Gly His Arg Lys Thr Lys Ile Ala Lys Phe
 450 455 460
 Asp Asp Leu Pro Thr Glu Arg Val Ser Ala His Lys Lys Ala Lys Glu
 465 470 475 480
 Leu Ala Ala Leu Asp Gln Glu Glu Asn Phe
 485 490

<210> 435

<211> 78

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 435

Met Lys Glu Phe Leu Ala Tyr Ile Val Lys Asn Leu Val Asp Lys Pro
 5 10 15

Glu Glu Val His Leu Lys Glu Val Gln Gly Thr Asn Thr Ile Ile Tyr
 20 25 30

Glu Leu Thr Val Ala Lys Gly Asp Ile Gly Lys Ile Ile Gly Lys Glu
 35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
 50 55 60

Arg Asp Asn Val Lys Val Ser Leu Glu Ile Met Glu Glu Arg
 65 70 75

<210> 436

<211> 647

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 436

Met Glu Ser Gly Pro Glu Ser Val Ser Ser Asn Gln Ser Ser Met Asn
 5 10 15

Pro Ile Ile Asn Gly Gln Ile Ala Ser Asn Ser Glu Thr Lys Glu Ser
 20 25 30

Thr Lys Glu Ser Glu Ala Ser Pro Ser Ala Ser Ser Ser Val Ser Ser
 35 40 45

Trp Ser Phe Leu Ser Ser Ala Lys His Ala Leu Ile Ser Leu Arg Asp
 50 55 60

Ala Ile Leu Asn Lys Asn Ser Ser Pro Thr Asp Ser Leu Ser Gln Leu
 65 70 75 80

Glu Ala Ser Thr Ser Thr Ser Thr Val Thr Arg Val Ala Ala Arg Asp
 85 90 95

Tyr Asn Glu Ala Lys Ser Asn Phe Asp Thr Ala Lys Ser Gly Leu Glu
 100 105 110

Asn Ala Thr Thr Leu Ala Glu Tyr Glu Thr Lys Met Ala Asp Leu Met
 115 120 125

Ala Ala Leu Gln Asp Met Glu Arg Leu Ala Lys Gln Lys Ala Glu Val
 130 135 140

Thr 145	Arg	Ile	Lys	Glu	Ala 150	Leu	Gln	Glu	Lys	Gln	Glu	Val	Ile	Asp	Lys 160
Leu	Asn	Gln	Leu	Val 165	Lys	Leu	Glu	Lys	Gln 170	Asn	Gln	Thr	Leu	Lys 175	Glu
Thr	Leu	Thr	Thr 180	Thr	Asp	Ser	Ala	Asp 185	Gln	Ile	Pro	Ala	Ile	Asn 190	Ser
Gln	Leu	Glu 195	Ile	Asn	Lys	Asn	Ser 200	Ala	Asp	Gln	Ile	Ile 205	Lys	Asp	Leu
Glu	Gly 210	Gln	Asn	Ile	Ser	Tyr 215	Glu	Ala	Val	Leu	Thr 220	Asn	Ala	Gly	Glu
Val 225	Ile	Lys	Ala	Ser	Ser 230	Glu	Ala	Gly	Ile	Lys 235	Leu	Gly	Gln	Ala	Leu 240
Gln	Ser	Ile	Val	Asp 245	Ala	Gly	Asp	Gln	Ser 250	Gln	Ala	Ala	Val	Leu 255	Gln
Ala	Gln	Gln	Asn 260	Asn	Ser	Pro	Asp	Asn 265	Ile	Ala	Ala	Thr	Lys 270	Lys	Leu
Ile	Asp	Ala 275	Ala	Glu	Thr	Lys	Val 280	Asn	Glu	Leu	Lys	Gln 285	Glu	His	Thr
Gly	Leu 290	Thr	Asp	Ser	Pro	Leu 295	Val	Lys	Lys	Ala	Glu 300	Glu	Gln	Ile	Ser
Gln 305	Ala	Gln	Lys	Asp	Ile 310	Gln	Glu	Ile	Lys	Pro 315	Ser	Gly	Ser	Asp	Ile 320
Pro	Ile	Val	Gly 325	Pro	Ser	Gly	Ser	Ala	Ala 330	Ser	Ala	Gly	Ser	Ala 335	Val
Gly	Ala	Leu	Lys 340	Ser	Ser	Asn	Asn	Ser 345	Gly	Arg	Ile	Ser	Leu 350	Leu	Leu
Asp	Asp	Val 355	Asp	Asn	Glu	Met	Ala 360	Ala	Ile	Ala	Met	Gln 365	Gly	Phe	Arg
Ser	Met 370	Ile	Glu	Gln	Phe	Asn 375	Val	Asn	Asn	Pro	Ala 380	Thr	Ala	Lys	Glu
Leu 385	Gln	Ala	Met	Glu	Ala 390	Gln	Leu	Thr	Ala	Met 395	Ser	Asp	Gln	Leu	Val 400
Gly	Ala	Asp	Gly 405	Glu	Leu	Pro	Ala	Glu	Ile 410	Gln	Ala	Ile	Lys	Asp 415	Ala
Leu	Ala	Gln	Ala 420	Leu	Lys	Gln	Pro	Ser 425	Thr	Asp	Gly	Leu	Ala 430	Thr	Ala
Met	Gly 435	Gln	Val	Ala	Phe	Ala 440	Ala	Ala	Lys	Val	Gly	Gly 445	Gly	Ser	Ala

Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
65 70 75 80

Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
85 90 95

Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
100 105 110

Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
115 120 125

Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
130 135 140

Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
145 150 155 160

Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
165 170 175

Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
180 185 190

Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
195 200 205

Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
210 215 220

Cys Ser Cys His Gln Ser Tyr
225 230

<210> 438

<211> 533

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 438

Met Ser Asn Ser Phe Arg Asp Gln Glu Gln Gly Leu Gln Ala Val Phe
5 10 15

Arg Ala Ala Arg Val Ile Ser His Met Phe Ser Gln Thr Ile Gly Pro
20 25 30

Tyr Gly Phe Ser Thr Ile Val His Asn Val Gln Asp Thr Arg Thr Thr
35 40 45

Gln Asp Ser Gln Ser Met Leu Lys Asp Ile Leu Phe Pro Asp Val Phe
50 55 60

Glu Asn Ile Gly Met Lys Leu Ile Arg Asp Thr Ala Leu Arg Thr Arg
65 70 75 80

Met Arg Phe Gly Asp Gly Ala Lys Thr Thr Ala Leu Leu Ile Glu Ala

85					90					95					
Leu	Leu	Ala	Glu	Gly	Met	Thr	Gly	Ile	Gln	Lys	Gly	Leu	Asp	Pro	His
			100					105					110		
Glu	Ile	His	Arg	Gly	Met	Leu	Leu	Ala	Glu	Lys	Lys	Ile	Gln	Glu	Val
		115					120					125			
Phe	Tyr	Arg	Glu	Thr	Phe	Pro	Leu	Ser	Asp	Leu	Glu	His	Thr	Val	Tyr
	130					135					140				
Val	Ser	Ser	Ile	Ala	Arg	Arg	Cys	Asn	Ser	Glu	Ile	Ala	Ser	Val	Leu
145					150					155					160
Ser	Ser	Ala	Val	Gly	Tyr	Gly	Gly	Lys	Asn	Gly	Tyr	Tyr	Ile	Val	Glu
				165					170					175	
Glu	His	Glu	Glu	His	Glu	Thr	Tyr	Trp	His	Ala	Glu	Glu	His	Ala	Val
				180				185					190		
Trp	Asp	Phe	Gly	Tyr	Ala	Ser	Pro	Tyr	Phe	Ile	Thr	His	Ala	Glu	Thr
		195					200					205			
Gly	Thr	Val	Glu	Tyr	Ser	Gln	Val	Tyr	Ile	Leu	Val	Ser	Glu	Gln	Pro
	210					215					220				
Leu	His	Tyr	Ser	Asn	Pro	Ser	Phe	Leu	Thr	Phe	Leu	Gln	Ser	Val	Val
225				230						235					240
Gln	Ala	Gly	Lys	Thr	Pro	Leu	Val	Ile	Leu	Ala	Glu	Ala	Phe	Asp	Lys
				245					250					255	
Glu	Leu	Leu	Ala	Met	Leu	Glu	Met	Asn	Gln	Ile	Glu	Arg	Val	Phe	Pro
			260					265					270		
Val	Cys	Ala	Val	Lys	Val	Ser	Gly	Lys	His	Ala	Arg	Glu	Ser	Leu	Glu
		275					280					285			
Asp	Ile	Ala	Val	Leu	Thr	Gly	Ala	Thr	Leu	Leu	Ser	Glu	Met	Asp	Phe
	290					295					300				
Glu	Asp	Ser	Glu	Glu	Glu	Arg	Ile	Thr	Asn	Arg	Leu	Gly	Phe	Val	Ala
305					310					315					320
Gly	Ile	Cys	Val	Ser	Ser	Thr	Ser	Leu	Cys	Val	Pro	Arg	Glu	Thr	Asp
				325					330					335	
Asn	Lys	Gln	Arg	Met	Ala	Glu	His	Cys	Ala	Phe	Leu	Gln	Asp	Lys	Leu
			340					345					350		
Ser	Phe	Ser	Gln	Glu	Glu	Glu	Ala	Ser	Ala	Arg	Leu	Arg	Arg	Arg	Leu
		355					360					365			
Ala	Arg	Leu	Ser	Ser	Gly	Glu	Val	Cys	Ile	His	Ile	Ala	Ala	Asp	Cys
	370					375					380				
Ile	Pro	Gln	Glu	Glu	Ile	Gly	Tyr	Ile	Thr	Ser	Ser	Ile	Arg	Ala	Met

385 390 395 400
 Thr Glu Ser Leu Arg Ser Gly Cys Leu Pro Gly Gly Gly Cys Ala Phe
 405 410 415
 Ile Arg Ala Ala Arg Glu Ile Ser Val Pro Leu Ala Leu Ser Pro Ser
 420 425 430
 Glu Arg Phe Gly Phe Leu Ala Val Leu Ser Ala Ala Glu Lys Pro Phe
 435 440 445
 Arg Ala Ile Val Thr Arg Ser Arg Arg Val Glu Glu Glu Val Phe Ser
 450 455 460
 Glu Val Phe Ser Gln Ala Asp Trp Arg Val Gly Phe Asn Gly Val Ser
 465 470 475 480
 Gly Phe Val Glu Asp Ile Val Ser Gln Gly Ile Cys Asp Gly Ala Ser
 485 490 495
 Cys Ile Gln Tyr Ala Leu Ser His Ala Val Gly Thr Thr Gly Leu Leu
 500 505 510
 Leu Thr Ser Ala Leu Phe Ile Ala Ser Gln Glu Pro Met Leu Arg Glu
 515 520 525
 Glu Asn Ser Glu Glu
 530

 <210> 439
 <211> 465
 <212> PRT
 <213> *Chlamydia trachomatis* serovar D

 <400> 439
 Met Asn Glu Ala Phe Asp Cys Val Val Ile Gly Ala Gly Pro Gly Gly
 5 10 15
 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ala Gly Leu Lys Thr Ala Leu
 20 25 30
 Ile Glu Lys Arg Glu Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
 35 40 45
 Pro Ser Lys Ala Leu Leu Ala Gly Ala Glu Val Val Thr Gln Ile Arg
 50 55 60
 His Ala Asp Gln Phe Gly Ile His Val Glu Gly Phe Ser Ile Asn Tyr
 65 70 75 80
 Pro Ala Met Val Gln Arg Lys Asp Ser Val Val Arg Ser Ile Arg Asp
 85 90 95
 Gly Leu Asn Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Phe Ser Gly
 100 105 110

Arg Gly Ser Leu Ile Ser Ser Thr Glu Val Lys Ile Leu Gly Glu Asn
 115 120 125
 Pro Ser Val Ile Lys Ala His Ser Ile Ile Leu Ala Thr Gly Ser Glu
 130 135 140
 Pro Arg Ala Phe Pro Gly Ile Pro Phe Ser Ala Glu Ser Pro Arg Ile
 145 150 155 160
 Leu Cys Ser Thr Gly Val Leu Asn Leu Lys Glu Ile Pro Gln Lys Met
 165 170 175
 Ala Ile Ile Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe
 180 185 190
 His Thr Leu Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile
 195 200 205
 Leu Ala Leu Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe
 210 215 220
 Thr Arg Gln Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile
 225 230 235 240
 Glu Asp Ile Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu
 245 250 255
 Glu Tyr Asp Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu
 260 265 270
 Asn Ile Gly Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val
 275 280 285
 Ile Pro Thr Asp Ala Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala
 290 295 300
 Ile Gly Asp Ile Thr Gly Lys Trp Gln Leu Ala His Val Ala Ser His
 305 310 315 320
 Gln Gly Ile Ile Ala Ala Arg Asn Ile Ala Gly His Lys Glu Glu Ile
 325 330 335
 Asp Tyr Ser Ala Val Pro Ser Val Ile Phe Thr Phe Pro Glu Val Ala
 340 345 350
 Ser Val Gly Leu Ser Pro Thr Ala Ala Gln Gln Gln Lys Ile Pro Val
 355 360 365
 Lys Val Thr Lys Phe Pro Phe Arg Ala Ile Gly Lys Ala Val Ala Met
 370 375 380
 Gly Glu Ala Asp Gly Phe Ala Ala Ile Ile Ser His Glu Thr Thr Gln
 385 390 395 400
 Gln Ile Leu Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile
 405 410 415

Ser Glu Ile Thr Leu Ala Val Arg Asn Glu Leu Thr Leu Pro Cys Ile
 420 425 430

Tyr Glu Thr Ile His Ala His Pro Thr Leu Ala Glu Val Trp Ala Glu
 435 440 445

Ser Ala Leu Leu Ala Val Asp Thr Pro Leu His Met Pro Pro Ala Lys
 450 455 460

Lys
 465

<210> 440

<211> 122

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 440

Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 5 10 15

Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Pro Ala Leu Ser Lys Glu
 20 25 30

Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
 35 40 45

Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
 50 55 60

Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80

Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95

Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110

Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
 115 120

<210> 441

<211> 553

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 441

Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
 5 10 15

Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
 20 25 30

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala

35	40	45
Asp Thr Lys Ala Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg		
50	55	60
Lys Asn His Ser Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro		
65	70	75
Val His Glu Ser Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly		
	85	90
Arg Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr		
	100	105
Gln Ala Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu		
	115	120
Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln		
	130	135
Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr		
145	150	155
Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln		
	165	170
Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly		
	180	185
Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser		
	195	200
Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro		
	210	215
Glu Asn Ala Cys Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val		
225	230	235
Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val		
	245	250
Pro Asp Gly Tyr Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr		
	260	265
Leu Gly Asp Met Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe		
	275	280
Cys Pro Leu Lys Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr		
	290	295
Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu		
305	310	315
Pro Cys Val Gln Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys		
	325	330
Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val		

Lys Ser Ala Thr Glu Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Thr
35 40 45

Asn Pro Gly Gln Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser
 50 55 60
 Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Ile Ser Ser
 65 70 75 80
 Pro Leu Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val
 85 90 95
 Leu Ser Leu Cys Ala Val Pro Gly Arg Arg Phe Ala Thr Pro His Ala
 100 105 110
 Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Thr Ile Thr Gly Gln
 115 120 125
 Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala
 130 135 140
 Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Gly Gln Ser Arg Glu Val
 145 150 155 160
 Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Ser Ala Asn Glu Ala
 165 170 175
 Met Glu Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu
 180 185 190

<210> 443

<211> 275

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 443

Met Gly Phe Ser Ser Leu Leu Thr Thr Cys Arg Tyr Leu Leu Tyr Ser
 5 10 15

Gly Ala Gly Asn Ser Phe Ile Leu Gly Glu Ser Met Pro Ser Leu Glu
 20 25 30

Asp Val Leu Phe Leu Cys Gln Glu Glu Met Val Asp Gly Phe Leu Cys
 35 40 45

Val Glu Ser Ser Glu Ile Ala Asp Ala Lys Leu Thr Val Phe Asn Ser
 50 55 60

Asp Gly Ser Ile Ala Ser Met Cys Gly Asn Gly Leu Arg Cys Ala Met
 65 70 75 80

Ala His Val Ala Gln Cys Phe Gly Leu Glu Asp Val Ser Ile Glu Thr
 85 90 95

Glu Arg Gly Val Tyr Gln Gly Lys Phe Phe Ser Met Asn Arg Val Leu
 100 105 110

Val Asp Met Thr Leu Pro Asp Trp Lys Lys Ala Glu Arg Lys Leu Thr
 115 120 125

His Val Leu Pro Gly Met Pro Glu Gln Val Phe Phe Ile Asp Thr Gly
 130 135 140
 Val Pro His Val Val Val Phe Val Ser Asp Leu Ser Lys Val Pro Val
 145 150 155 160
 Gln Glu Trp Gly Ser Phe Leu Arg Tyr His Glu Asp Phe Ala Pro Glu
 165 170 175
 Gly Val Asn Val Asp Phe Val Gln Arg Lys Lys Asp Asp Leu Leu Leu
 180 185 190
 Val Tyr Thr Tyr Glu Arg Gly Cys Glu Arg Glu Thr Leu Ser Cys Gly
 195 200 205
 Thr Gly Met Leu Ala Ser Ala Leu Val Ala Ala Asp Ile Phe Ser Leu
 210 215 220
 Gly Gln Asp Phe Ser Ile Ala Val Cys Ser Arg Ser Arg Asn Leu Ile
 225 230 235 240
 Lys Ile Phe Ser Glu Lys Gly Lys Val Phe Leu Glu Gly Pro Val Ser
 245 250 255
 Leu Leu Asn Arg Ser Glu Asn Phe Gly Trp Leu Glu Pro Lys Ser Arg
 260 265 270
 Arg Phe Gly
 275

<210> 444

<211> 1770

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 444

Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Ala Leu Ser Ser
 5 10 15

Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn Thr Asp Cys
 20 25 30

Asn Val Ser Lys Leu Gly Tyr Ser Thr Ser Gln Ala Phe Thr Asp Met
 35 40 45

Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val Ser Phe
 50 55 60

Tyr Asp Phe Ser Thr Ser Ser Arg Leu Pro Arg Lys His Leu Ser Ser
 65 70 75 80

Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser Ser Ser Ser
 85 90 95

Gly Glu Thr Asp Glu Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly Ile

100								105				110					
Ile	Tyr	Ala	Arg	Glu	Lys	Leu	Thr	Ile	Ser	Glu	Ser	Gln	Asp	Ser	Leu		
		115					120					125					
Ser	Asn	Gln	Ser	Ile	Glu	Leu	His	Asp	Asn	Ser	Ile	Phe	Phe	Gly	Glu		
	130					135					140						
Gly	Glu	Val	Ile	Phe	Asp	His	Arg	Val	Ala	Leu	Lys	Asn	Gly	Gly	Ala		
145					150					155					160		
Ile	Tyr	Gly	Glu	Lys	Glu	Val	Val	Phe	Glu	Asn	Ile	Lys	Ser	Leu	Leu		
				165				170						175			
Val	Glu	Val	Asn	Ile	Ala	Val	Glu	Lys	Gly	Gly	Ser	Val	Tyr	Ala	Lys		
			180					185				190					
Glu	Arg	Val	Ser	Leu	Glu	Asn	Val	Thr	Glu	Ala	Thr	Phe	Ser	Ser	Asn		
		195					200					205					
Gly	Gly	Glu	Gln	Gly	Gly	Gly	Gly	Ile	Tyr	Ser	Glu	Gln	Asp	Met	Leu		
	210					215					220						
Ile	Ser	Asp	Cys	Asn	Asn	Val	His	Phe	Gln	Gly	Asn	Ala	Ala	Gly	Ala		
225					230					235					240		
Thr	Ala	Val	Lys	Gln	Cys	Leu	Asp	Glu	Glu	Met	Ile	Val	Leu	Leu	Ala		
				245					250					255			
Glu	Cys	Val	Asp	Ser	Leu	Ser	Glu	Asp	Thr	Leu	Asp	Ser	Thr	Pro	Glu		
			260					265					270				
Thr	Glu	Gln	Thr	Glu	Ser	Asn	Gly	Asn	Gln	Asp	Gly	Ser	Ser	Glu	Thr		
		275					280						285				
Glu	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser	Pro	Asp		
	290					295					300						
Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser	Leu	Thr		
305					310					315					320		
Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile	Ala	Thr		
				325					330					335			
Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser	Cys	Thr	Asn		
			340					345					350				
Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His	Gly	Gly		
		355					360					365					
Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu		
	370					375					380						
Ser	Ile	Thr	Thr	Pro	Pro	Leu	Ile	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn		
385					390					395					400		
Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu		

				405						410					415	
Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys	Glu	Ser	
			420					425					430			
Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Ile	Thr	Asp	Thr	
		435					440					445				
Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu	
	450					455					460					
Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr	Ala	Lys	
465					470				475						480	
Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln	
				485					490						495	
Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile	Glu	Asn	
			500					505					510			
Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys	Gly	Gly	
	515						520					525				
Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn	Asn	Leu	Glu	
	530					535					540					
Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys	Leu	Thr	
545				550					555						560	
Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn	
				565					570					575		
Ser	Ala	Ala	Lys	Glu	Gly	Gly	Ala	Ile	His	Ser	Lys	Thr	Val	Thr	Leu	
			580					585					590			
Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr	Val	Lys	Ala	
		595					600					605				
Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro	Pro	Val	Glu	
	610					615					620					
Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asp	Pro	Asn	Ser	Asn	Thr	Glu	Gly	
625					630					635					640	
Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp	Thr	Ala	Asp	
			645						650					655		
Thr	Gly	Thr	Gly	Asp	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr	Ser	Asp	Thr	
			660					665					670			
Gly	Asn	Ala	Glu	Ser	Glu	Glu	Gln	Leu	Gln	Asp	Ser	Thr	Gln	Ser	Asn	
		675					680					685				
Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Asn	Ile	Asp	Gln	Ser	Asn	Glu	Asn	
	690					695					700					
Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser	

705					710					715					720
Val	Ser	Ser	Ser	Ser	Glu	Ser	Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly
				725					730					735	
Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn
			740					745					750		
Ala	Cys	Leu	Ala	Lys	Ser	Tyr	Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val
		755					760					765			
Ser	Asn	Ser	Ser	Gly	Ser	Glu	Glu	Pro	Val	Thr	Ser	Ser	Ser	Asp	Ser
	770					775					780				
Asp	Val	Thr	Ala	Ser	Ser	Asp	Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp
785					790					795					800
Ser	Ala	Gly	Asp	Ser	Glu	Glu	Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr
				805					810					815	
Thr	Glu	Thr	Leu	Thr	Leu	Ile	Gly	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr
			820					825					830		
Val	Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys
		835					840					845			
Ala	Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asp	Val	Leu
	850					855					860				
Gly	Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser
865					870					875					880
Ser	Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser
				885					890					895	
Thr	Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr
			900					905					910		
Ile	Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala
		915					920					925			
Asn	Asn	Thr	Thr	Asp	Thr	Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile
	930					935					940				
Gly	Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu
945					950					955					960
Asn	Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly	Leu	Val	Pro	Gly	Thr	Gln
				965					970					975	
Asn	Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys
			980					985					990		
Asn	Lys	Ala	Leu	Lys	Arg	Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile
		995					1000					1005			
Lys	Ala	Tyr	Thr	Ala	Thr	Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Glu	Gly

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Ser Ala Ile Tyr Phe Thr Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser		
1025	1030	1035 1040
Val Leu Phe Thr Gly Asn Leu Val Thr Leu Thr Leu Ser Thr Thr Thr		
	1045	1050 1055
Glu Gly Thr Pro Ala Thr Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala		
	1060	1065 1070
Ala Ile Phe Gly Gln Ile Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn		
	1075	1080 1085
Leu Pro Leu Lys Leu Ile Ala Ser Gly Gly Asn Ile Cys Phe Arg Asn		
	1090	1095 1100
Asn Glu Tyr Arg Pro Thr Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys		
	1105	1110 1115 1120
Ser Ile Ala Gly Asp Val Lys Leu Thr Met Gln Ala Ala Lys Gly Lys		
	1125	1130 1135
Thr Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly		
	1140	1145 1150
Thr Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp		
	1155	1160 1165
Ser Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser		
	1170	1175 1180
Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His		
	1185	1190 1195 1200
Ser Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser		
	1205	1210 1215
Phe Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val		
	1220	1225 1230
Leu Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val Ile Asn Asn Met		
	1235	1240 1245
Thr Ile Asp Leu Ser Ser Val Glu Lys Asn Gly Ile Ala Glu Gly Asn		
	1250	1255 1260
Ile Phe Thr Pro Pro Glu Leu Arg Ile Ile Asp Thr Thr Thr Gly Gly		
	1265	1270 1275 1280
Ser Gly Gly Thr Pro Ser Thr Asp Ser Glu Ser Asn Gln Asn Ser Asp		
	1285	1290 1295
Asp Thr Glu Glu Gln Asn Asn Asn Asp Ala Ser Asn Gln Gly Glu Ser		
	1300	1305 1310
Ala Asn Gly Ser Ser Ser Pro Ala Val Ala Ala Ala His Thr Ser Arg		

1315	1320	1325
Thr Arg Asn Phe Ala Ala Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro		
1330	1335	1340
Thr Ala Thr Thr Thr Thr Ser Asn Gln Val Ile Leu Gly Gly Glu Ile		
1345	1350	1355 1360
Lys Leu Ile Asp Pro Asn Gly Thr Phe Phe Gln Asn Pro Ala Leu Arg		
	1365 1370	1375
Ser Asp Gln Gln Ile Ser Leu Leu Val Leu Pro Thr Asp Ser Ser Lys		
	1380 1385	1390
Met Gln Ala Gln Lys Ile Val Leu Thr Gly Asp Ile Ala Pro Gln Lys		
	1395 1400	1405
Gly Tyr Thr Gly Thr Leu Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly		
	1410 1415	1420
Thr Ile Ser Val Leu Trp Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr		
1425	1430	1435 1440
Val Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln		
	1445	1450 1455
Met Leu Met Val Thr Val Lys Gln Gly Leu Leu Asn Asp Lys Met Asn		
	1460	1465 1470
Leu Ala Arg Phe Glu Glu Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly		
	1475	1480 1485
Leu Gly Thr Met Leu Ser Gln Val Gly Thr Pro Thr Ser Glu Glu Phe		
	1490	1495 1500
Thr Tyr Tyr Ser Arg Gly Ala Ser Val Ala Leu Asp Ala Lys Pro Ala		
1505	1510	1515 1520
His Asp Val Ile Val Gly Ala Ala Phe Ser Lys Met Ile Gly Lys Thr		
	1525	1530 1535
Lys Ser Leu Lys Arg Glu Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr		
	1540	1545 1550
Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Pro Phe His Phe Val Ile		
	1555	1560 1565
Asn Lys Lys Thr Glu Lys Ser Leu Pro Leu Leu Leu Gln Gly Val Ile		
	1570	1575 1580
Ser Tyr Gly Tyr Ile Lys His Asp Thr Val Thr His Tyr Pro Thr Ile		
1585	1590	1595 1600
Arg Glu Arg Asn Lys Gly Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala		
	1605	1610 1615
Leu Arg Val Ser Ser Val Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys		

1620 1625 1630
 Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys
 1635 1640 1645
 Gln Phe Thr Glu Thr Glu Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr
 1650 1655 1660
 Tyr Arg Asn Leu Ala Ile Pro Met Gly Leu Ala Phe Glu Gly Glu Leu
 1665 1670 1675 1680
 Ser Gly Asn Asp Ile Leu Met Tyr Asn Arg Phe Ser Val Ala Tyr Met
 1685 1690 1695
 Leu Ser Ile Tyr Arg Asn Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser
 1700 1705 1710
 Ser Gly Glu Gly Gly Glu Ile Ile Cys Gly Val Pro Thr Arg Asn Ser
 1715 1720 1725
 Ala Arg Gly Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Leu Trp Thr
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 Leu Tyr Gly Ser Tyr Thr Ile Glu Ala Asp Ala His Thr Leu Ala His
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 Met Met Asn Cys Gly Ala Arg Met Thr Phe
 1765 1770

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 <213> Chlamydia trachomatis serovar D

 <400> 445
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 Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg
 20 25 30
 Val Gly Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Val Gly Glu Ala
 35 40 45
 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr
 50 55 60
 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser
 65 70 75 80
 Ser Ser Asn Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr
 85 90 95
 Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr Asn Ala His
 100 105 110

Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu
 115 120 125
 Thr Leu Ser Glu Ile Lys Ile Thr Gly Glu Gly Gly Ala Ile Phe Ser
 130 135 140
 Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Gly Leu Thr Ile Gln Asn
 145 150 155 160
 Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Glu Ser Thr Ile
 165 170 175
 Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Ser Asn Ser Ala Glu
 180 185 190
 Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala
 195 200 205
 Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp Ser Val Ser
 210 215 220
 Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn Leu Gln Ser
 225 230 235 240
 His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr Asp Thr Glu
 245 250 255
 Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala Ile Tyr Ala
 260 265 270
 Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu Phe Ser Ile
 275 280 285
 Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu Lys Asp Val
 290 295 300
 Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn Gly Ala Glu
 305 310 315 320
 Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser Ile Gln Ser
 325 330 335
 Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln Gly Gly Gly
 340 345 350
 Ala Leu Tyr Val Glu Gly Asp Ile Asn Phe Gln Asp Leu Glu Glu Ile
 355 360 365
 Arg Ile Lys Tyr Asn Lys Ala Gly Thr Phe Glu Thr Lys Lys Ile Thr
 370 375 380
 Leu Pro Lys Ala Gln Ala Ser Ala Gly Asn Ala Asp Ala Trp Ala Ser
 385 390 395 400
 Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly
 405 410 415

Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala
 420 425 430
 Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr
 435 440 445
 Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val
 450 455 460
 Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His
 465 470 475 480
 Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Gly Ile
 485 490 495
 Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu
 500 505 510
 Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Gly Leu Phe Ile Lys
 515 520 525
 Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu
 530 535 540
 Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys
 545 550 555 560
 Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile
 565 570 575
 Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly
 580 585 590
 Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu
 595 600 605
 Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly
 610 615 620
 Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln
 625 630 635 640
 Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val
 645 650 655
 Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Ser Thr Val Ser Ser Leu
 660 665 670
 Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys
 675 680 685
 Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val
 690 695 700
 Val Asp Thr Thr Ile Ser Lys Asn Thr Ala Lys Lys Gly Gly Gly Ile
 705 710 715 720

Tyr	Ala	Lys	Lys	Ala	Lys	Met	Ser	Arg	Ile	Asp	Gln	Leu	Asn	Ile	Ser		
				725					730					735			
Glu	Asn	Ser	Ala	Thr	Glu	Ile	Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser		
			740					745					750				
Leu	Glu	Leu	Asp	Ala	Leu	Val	Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val		
		755					760					765					
Gly	Lys	Glu	Gly	Gly	Gly	Leu	His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn		
	770					775					780						
Leu	Lys	Ser	Gly	Phe	Ser	Phe	Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser		
785					790					795					800		
Thr	Gly	Val	Ala	Thr	Thr	Ala	Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser		
				805					810						815		
Leu	Gln	Ala	Ala	Ala	Ala	Ala	Val	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr		
			820					825					830				
Tyr	Ser	Gly	Val	Val	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe		
		835					840					845					
Ser	Gln	Cys	Ser	Gly	Thr	Cys	Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp		
	850					855					860						
Asn	Asn	Pro	Ser	Gln	Ser	Ser	Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr		
865					870					875					880		
Ala	Lys	Thr	Ser	Leu	Ser	Ile	Gly	Ser	Ser	Asp	Ala	Gly	Thr	Ser	Tyr		
				885					890					895			
Ile	Phe	Ser	Gly	Asn	Ser	Val	Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly		
			900					905					910				
Gln	Ile	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys		
		915					920					925					
Pro	Ala	Thr	Phe	Ser	Asn	Asn	Thr	Ala	Ser	Met	Ala	Thr	Pro	Lys	Thr		
	930					935					940						
Ser	Ser	Glu	Asp	Gly	Ser	Ser	Gly	Asn	Ser	Ile	Lys	Asp	Thr	Ile	Gly		
945					950					955					960		
Gly	Ala	Ile	Ala	Gly	Thr	Ala	Ile	Thr	Leu	Ser	Gly	Val	Ser	Arg	Phe		
				965					970					975			
Ser	Gly	Asn	Thr	Ala	Asp	Leu	Gly	Ala	Ala	Ile	Gly	Thr	Leu	Ala	Asn		
			980					985					990				
Ala	Asn	Thr	Pro	Ser	Ala	Thr	Ser	Gly	Ser	Gln	Asn	Ser	Ile	Thr	Glu		
		995					1000					1005					
Lys	Ile	Thr	Leu	Glu	Asn	Gly	Ser	Phe	Ile	Phe	Glu	Arg	Asn	Gln	Ala		
	1010					1015					1020						

Asn Lys Arg Gly Ala Ile Tyr Ser Pro Ser Val Ser Ile Lys Gly Asn
 1025 1030 1035 1040
 Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln
 1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325

Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
 1395 1400 1405
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg
 1410 1415 1420
 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met
 1425 1430 1435 1440
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg
 1445 1450 1455
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
 1460 1465 1470
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr
 1475 1480 1485
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe
 1490 1495 1500
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile
 1505 1510 1515 1520
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
 1525 1530 1535
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln
 1540 1545 1550
 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
 1555 1560 1565
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
 1570 1575 1580
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile
 1585 1590 1595 1600
 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr
 1605 1610 1615
 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
 1620 1625 1630

Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr
130 135 140

Val 145	Pro	Ala	Tyr	Phe	Asn 150	Asp	Ser	Gln	Arg	Ala 155	Ser	Thr	Lys	Asp	Ala 160
Gly	Arg	Ile	Ala	Gly 165	Leu	Asp	Val	Lys	Arg 170	Ile	Ile	Pro	Glu	Pro 175	Thr
Ala	Ala	Ala	Leu 180	Ala	Tyr	Gly	Ile	Asp 185	Lys	Glu	Gly	Asp	Lys 190	Lys	Ile
Ala	Val	Phe 195	Asp	Leu	Gly	Gly	Gly 200	Thr	Phe	Asp	Ile	Ser 205	Ile	Leu	Glu
Ile	Gly 210	Asp	Gly	Val	Phe	Glu 215	Val	Leu	Ser	Thr	Asn 220	Gly	Asp	Thr	His
Leu 225	Gly	Gly	Asp	Asp	Phe 230	Asp	Gly	Val	Ile	Ile 235	Asn	Trp	Met	Leu	Asp 240
Glu	Phe	Lys	Lys	Gln 245	Glu	Gly	Ile	Asp	Leu 250	Ser	Lys	Asp	Asn	Met 255	Ala
Leu	Gln	Arg	Leu 260	Lys	Asp	Ala	Ala	Glu 265	Lys	Ala	Lys	Ile	Glu 270	Leu	Ser
Gly	Val	Ser 275	Ser	Thr	Glu	Ile	Asn 280	Gln	Pro	Phe	Ile	Thr 285	Ile	Asp	Ala
Asn	Gly 290	Pro	Lys	His	Leu	Ala 295	Leu	Thr	Leu	Thr	Arg 300	Ala	Gln	Phe	Glu
His 305	Leu	Ala	Ser	Ser	Leu 310	Ile	Glu	Arg	Thr	Lys 315	Gln	Pro	Cys	Ala	Gln 320
Ala	Leu	Lys	Asp	Ala 325	Lys	Leu	Ser	Ala	Ser 330	Asp	Ile	Asp	Asp	Val 335	Leu
Leu	Val	Gly	Gly 340	Met	Ser	Arg	Met	Pro 345	Ala	Val	Gln	Ala	Val 350	Val	Lys
Glu	Ile	Phe 355	Gly	Lys	Glu	Pro	Asn 360	Lys	Gly	Val	Asn	Pro 365	Asp	Glu	Val
Val	Ala 370	Ile	Gly	Ala	Ala	Ile 375	Gln	Gly	Gly	Val	Leu 380	Gly	Gly	Glu	Val
Lys 385	Asp	Val	Leu	Leu	Leu 390	Asp	Val	Ile	Pro	Leu 395	Ser	Leu	Gly	Ile	Glu 400
Thr	Leu	Gly	Gly 405	Val	Met	Thr	Pro	Leu	Val 410	Glu	Arg	Asn	Thr	Thr 415	Ile
Pro	Thr	Gln	Lys 420	Lys	Gln	Ile	Phe	Ser 425	Thr	Ala	Ala	Asp	Asn 430	Gln	Pro
Ala	Val	Thr 435	Ile	Val	Val	Leu	Gln 440	Gly	Glu	Arg	Pro	Met 445	Ala	Lys	Asp

Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro
 450 455 460
 Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly
 465 470 475 480
 Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser Gly Arg Glu Gln Lys
 485 490 495
 Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu Asp Glu Ile Gln Gln
 500 505 510
 Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu Asp Lys Gln Arg Lys
 515 520 525
 Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly Met Ile Phe Arg Ala
 530 535 540
 Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile Pro Ala Glu Leu Val
 545 550 555 560
 Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg Gln Ala Ile Lys Glu
 565 570 575
 Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser Asp Glu Leu Ser Thr
 580 585 590
 His Met Gln Lys Ile Gly Glu Ala Met Gln Ala Gln Ser Ala Ser Ala
 595 600 605
 Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly Pro Asn Ile Asn Ser
 610 615 620
 Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg Pro Pro Ala Gly Gly
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 Ser Ala Ser Ser Thr Asp Asn Ile Glu Asp Ala Asp Val Glu Ile Val
 645 650 655
 Asp Lys Pro Glu
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<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 447

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Ile Ala Tyr Ser Phe Leu Phe Ser Leu Ala His Gly Asp Val Phe Gly
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Leu Asp Cys Gly Ile Asp Leu Arg Ile Tyr Asp Ile Pro Gly Thr Glu

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 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu
 35 40 45
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
 50 55 60
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala
 65 70 75 80
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr
 130 135 140
 Val Thr Thr Asp Val Val Lys Thr Val Ala Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala
 165 170 175
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
 180 185 190
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
 210 215 220
 Asp Thr Arg Glu Leu Ile Ala Leu
 225 230

<210> 449
 <211> 1252
 <212> PRT
 <213> Chlamydia trachomatis serovar D

Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Val Asn Ala Arg
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 Ser Thr Ile Met Arg Leu Phe Phe Asp Ala Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Lys Lys Leu Gly Phe Pro Leu Asp
 340 345 350
 Asp Glu Thr Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Arg Met Gly Asp Glu Lys Thr Ser
 370 375 380
 Ile Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395 400
 Glu Leu Ile Gln Asn His Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Ile Ile Ser Ala Lys Gly Leu Val Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475 480
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Val Val Arg Asp Gly Ile Val
 530 535 540
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val
 545 550 555 560
 Ile Ala Gln Ala Ser Ala Glu Leu Asp Glu Tyr Asp Met Phe Lys Thr
 565 570 575
 Pro Val Cys Trp Ala Arg Tyr Lys Gly Glu Ala Phe Glu Ala Asp Thr
 580 585 590
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Val
 595 600 605

Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala
 610 615 620
 Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr
 625 630 635 640
 Glu Ala Ala Ile Val Gly Thr Gly Leu Glu Gly Arg Ala Ala Lys Asp
 645 650 655
 Ser Gly Ala Ile Ile Val Ala Gln Glu Asp Gly Val Val Glu Tyr Val
 660 665 670
 Asp Ser Tyr Glu Ile Val Val Ala Lys Lys Asn Asn Pro Thr Leu Lys
 675 680 685
 Asp Arg Tyr Gln Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys
 690 695 700
 Ile Asn Gln Thr Pro Leu Cys Ser Val Gly Asp Val Val Thr His Gly
 705 710 715 720
 Asp Val Leu Ala Asp Gly Pro Ala Thr Asp Lys Gly Glu Leu Ala Leu
 725 730 735
 Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe
 740 745 750
 Glu Asp Ala Ile Ile Ile Ser Glu Arg Leu Ile Lys Gln Asp Ala Tyr
 755 760 765
 Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys
 770 775 780
 Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Glu Glu
 785 790 795 800
 Val Leu Ala Asn Leu Gly Glu Asp Gly Val Val Arg Ile Gly Ala Glu
 805 810 815
 Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu
 820 825 830
 Thr Glu Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu
 835 840 845
 Lys Ala Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr
 850 855 860
 Glu Gly Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu
 865 870 875 880
 Ser Lys Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp
 885 890 895
 Leu Gln Lys Glu Tyr Lys Ser Gln Leu Ala Gln Leu Lys Val Glu His
 900 905 910

Arg Glu Lys Leu Gly Ala Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala
 915 920 925
 Ile Ile His Arg Arg Ser Ala Asp Ile Leu Val Gln Glu Gly Ala Ile
 930 935 940
 Phe Asp Gln Glu Thr Ile Glu Leu Leu Glu Arg Glu Ser Leu Val Asp
 945 950 955 960
 Leu Leu Met Ala Pro Cys Asp Met Tyr Asp Val Leu Lys Asp Ile Leu
 965 970 975
 Ser Ser Tyr Glu Thr Ala Val Gln Arg Leu Glu Val Asn Tyr Lys Thr
 980 985 990
 Glu Ala Glu His Ile Lys Glu Gly Asp Ala Asp Leu Asp His Gly Val
 995 1000 1005
 Ile Arg Gln Val Lys Val Tyr Val Ala Ser Lys Arg Lys Leu Gln Val
 1010 1015 1020
 Gly Asp Lys Met Ala Gly Arg His Gly Asn Lys Gly Val Val Ser Lys
 1025 1030 1035 1040
 Ile Val Pro Glu Ala Asp Met Pro Phe Leu Ala Asn Gly Glu Thr Val
 1045 1050 1055
 Gln Met Ile Leu Asn Pro Leu Gly Val Pro Ser Arg Met Asn Leu Gly
 1060 1065 1070
 Gln Val Leu Glu Thr His Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile
 1075 1080 1085
 Tyr Val Lys Thr Pro Val Phe Glu Gly Phe Pro Glu Ser Arg Ile Trp
 1090 1095 1100
 Asp Met Met Ile Glu Gln Gly Leu Pro Glu Asp Gly Lys Ser Tyr Leu
 1105 1110 1115 1120
 Phe Asp Gly Lys Thr Gly Glu Arg Phe Asp Ser Lys Val Val Val Gly
 1125 1130 1135
 Tyr Ile Tyr Met Leu Lys Leu Ser His Leu Ile Ala Asp Lys Ile His
 1140 1145 1150
 Ala Arg Ser Ile Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly
 1155 1160 1165
 Gly Lys Ala Gln Met Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp
 1170 1175 1180
 Ala Leu Glu Ala Tyr Gly Val Ala His Met Leu Gln Glu Ile Leu Thr
 1185 1190 1195 1200
 Val Lys Ser Asp Asp Val Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile
 1205 1210 1215

Val Lys Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn
 1220 1225 1230

Val Leu Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met
 1235 1240 1245

Val Val Asp Ala
 1250

<210> 450

<211> 298

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 450

Met Leu Lys Ile Asp Leu Thr Gly Lys Ile Ala Phe Ile Ala Gly Ile
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Gly Asp Asp Asn Gly Tyr Gly Trp Gly Ile Ala Lys Met Leu Ala Glu
 20 25 30

Ala Gly Ala Thr Ile Leu Val Gly Thr Trp Val Pro Ile Tyr Lys Ile
 35 40 45

Phe Ser Gln Ser Leu Glu Leu Gly Lys Phe Asn Ala Ser Arg Glu Leu
 50 55 60

Ser Asn Gly Glu Leu Leu Thr Phe Ala Lys Ile Tyr Pro Met Asp Ala
 65 70 75 80

Ser Phe Asp Thr Pro Glu Asp Ile Pro Gln Glu Ile Leu Glu Asn Lys
 85 90 95

Arg Tyr Lys Asp Leu Ser Gly Tyr Thr Val Ser Glu Val Val Glu Gln
 100 105 110

Val Lys Lys His Phe Gly His Ile Asp Ile Leu Val His Ser Leu Ala
 115 120 125

Asn Ser Pro Glu Ile Ala Lys Pro Leu Leu Asp Thr Ser Arg Lys Gly
 130 135 140

Tyr Leu Ala Ala Leu Ser Thr Ser Ser Tyr Ser Phe Ile Ser Leu Leu
 145 150 155 160

Ser His Phe Gly Pro Ile Met Asn Ala Gly Ala Ser Thr Ile Ser Leu
 165 170 175

Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly Gly Gly Met
 180 185 190

Asn Ala Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Val Leu Ala Trp
 195 200 205

Glu Ala Gly Arg Arg Trp Gly Val Arg Val Asn Thr Ile Ser Ala Gly

Trachoma "34460"

210 215 220

Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met
 225 230 235 240

Val Asp Tyr Tyr Gln Asp Trp Ala Pro Leu Pro Ser Pro Met Glu Ala
 245 250 255

Glu Gln Val Gly Ala Ala Ala Ala Phe Leu Val Ser Pro Leu Ala Ser
 260 265 270

Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met
 275 280 285

Gly Ile Gly Pro Glu Met Phe Pro Lys Asp
 290 295

<210> 451

<211> 298

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 451

Met Ser Leu Gln Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr
 5 10 15

His Gln Ser His Leu Leu His Asp Arg Val Val Lys Ala Leu His Gln
 20 25 30

Tyr Tyr Asp Ser Gly Trp Gln Leu Phe Phe Leu Thr Gly Arg Tyr Phe
 35 40 45

Ser Tyr Ala Tyr Pro Leu Phe Gln Asn Phe Ser Val Pro Phe Leu Leu
 50 55 60

Gly Ser Gln Asn Gly Ser Ser Val Trp Ser Ser Thr Asp Lys Glu Phe
 65 70 75 80

Ile Tyr Phe Arg Ser Leu Ser Arg Asp Phe Leu Tyr Val Leu Glu Lys
 85 90 95

Tyr Phe Glu Asp Leu Asp Leu Ile Ala Cys Ile Glu Ser Gly Ala Ser
 100 105 110

Asn Arg Asp Val Tyr Phe Arg Lys Gly Leu Gly Lys Thr Ser Gln Glu
 115 120 125

Leu Lys Ala Ile Leu Asp Ala Val Tyr Phe Pro Thr Pro Glu Ala Ala
 130 135 140

Arg Leu Leu Val Asp Val Gln Gly His Leu Ser Glu Glu Phe Ser Tyr
 145 150 155 160

Glu Asp Phe Ala Ile Ala Lys Phe Phe Gly Glu Arg Glu Glu Val Lys
 165 170 175

Lys Ile Met Asp Arg Phe Ile Gln Ser Pro Glu Val Ser Ser Gln Val
180 185 190

Thr Met Asn Tyr Met Arg Trp Pro Phe Asp Phe Lys Tyr Ala Val Leu
195 200 205

Leu Leu Thr Leu Lys Asp Val Ser Lys Gly Phe Ala Val Asp Gln Val
210 215 220

Val Gln Thr Phe Tyr Lys Glu Asn Lys Pro Phe Ile Met Ala Ser Gly
225 230 235 240

Asp Asp Ala Asn Asp Ile Asp Leu Leu Ser Arg Gly Asp Phe Lys Ile
245 250 255

Val Ile Gln Thr Ala Pro Glu Glu Met His Gly Leu Ala Asp Phe Leu
260 265 270

Ala Pro Pro Ala Lys Asp Phe Gly Ile Leu Ser Ala Trp Glu Ala Gly
275 280 285

Glu Leu Arg Tyr Lys Gln Leu Val Asn Pro
290 295

<210> 452

<211> 153

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 452

Met Leu Arg Leu Phe Gln His Ile Leu Cys Phe Leu Glu Glu Asp Pro
5 10 15

Ser Phe Val Asp Val Pro Gln Glu Leu Ser Phe Val Asn Glu Ala Phe
20 25 30

Ser Gly Ser Met Arg Trp Glu Val Gly Arg Met Leu Gly Ser Leu Leu
35 40 45

Leu Leu Leu Gly Ile Phe Gly Gly Gly Cys Leu Leu Phe Arg Arg Phe
50 55 60

Leu Arg Ser Arg Gly His Leu Pro Ser Gly Asn Ser Ser Ile Lys Ile
65 70 75 80

Leu Asp Gln Arg Val Leu Ala Ser Lys Thr Ser Ile Tyr Val Ile Lys
85 90 95

Val Ala Asn Lys Thr Leu Val Val Ala Glu Arg Gly Glu Arg Val Thr
100 105 110

Leu Leu Ser Glu Phe Pro Pro Asn Thr Asp Leu Asn Glu Leu Ile Gln
115 120 125

Lys Asp Gln Lys Lys Pro Ser Thr Pro Arg Gly Glu Met Leu Ser Gly
130 135 140

Phe Leu Lys Gln Phe Lys Glu Lys Lys
145 150

<210> 453

<211> 569

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 453

Met Pro Lys Gln Ala Asp Tyr Thr Trp Gly Ala Lys Lys Asn Leu Asp
5 10 15

Thr Ile Ala Cys Leu Pro Glu Asp Val Lys Gln Phe Lys Asp Leu Leu
20 25 30

Tyr Ala Met Tyr Gly Phe Thr Ala Thr Glu Glu Glu Pro Thr Ser Glu
35 40 45

Val His Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Ser Lys
50 55 60

Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
65 70 75 80

Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Thr Val Gly Ala Glu
85 90 95

Val Glu Val Tyr Leu Asp Gln Thr Glu Asp Asp Glu Gly Lys Val Val
100 105 110

Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
115 120 125

Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
130 135 140

Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
145 150 155 160

Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
165 170 175

Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Asp Arg Arg
180 185 190

Asn Val Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
195 200 205

Lys Lys Ala Glu Leu Ile Glu Gln Ile Thr Ile Gly Glu Arg Arg Lys
210 215 220

Gly Ile Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
225 230 235 240

Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile

	245		250		255
Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile	260		265		270
Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys	275		280		285
Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro	290		295		300
Gly Lys Arg Val Arg Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala	305		310		315
Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Val Ser Glu	325		330		335
Met Ser Trp Val Lys Asn Ile Val Asp Pro Asn Glu Val Val Asn Lys	340		345		350
Gly Asp Glu Val Glu Val Val Val Leu Ser Ile Gln Lys Asp Glu Gly	355		360		365
Lys Ile Ser Leu Gly Leu Lys Gln Thr Lys His Asn Pro Trp Asp Asn	370		375		380
Ile Glu Glu Lys Tyr Pro Ile Gly Leu Arg Val Thr Ala Glu Ile Lys	385		390		395
Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu	405		410		415
Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His	420		425		430
Pro Ser Glu Leu Phe Lys Lys Gly Asn Thr Val Glu Ala Val Ile Leu	435		440		445
Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu	450		455		460
Thr Pro Asn Pro Trp Asp Glu Ile Glu Val Met Phe Pro Val Gly Ser	465		470		475
Asp Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val	485		490		495
Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser	500		505		510
Glu Lys Pro Phe Ala Lys Ile Glu Asp Val Leu Ser Ile Gly Asp Lys	515		520		525
Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser	530		535		540
Leu Ser Ile Lys Glu Phe Leu Val His Gly Gly Asp Ala Gly His Asp					

545	550	555	560
Ala Glu Glu Glu Ser Ser Asp Arg Asp			
565			
<210> 454			
<211> 666			
<212> PRT			
<213> Chlamydia trachomatis serovar D			
<400> 454			
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Lys Lys Leu Ser Ala Asp Arg Tyr Arg Phe Ser Leu Phe Ser Ser Gln			
20	25	30	
Ala Gln Gln Val Thr Leu Val Leu Leu Asp Pro Leu Ser Glu Ile His			
35	40	45	
Glu Ile Pro Leu Ser Ser Thr Asp His Arg Thr Gly Ala Ile Trp His			
50	55	60	
Ile Glu Ile Ala Gly Ile Ser Ser Glu Trp Ser Tyr Ala Tyr Lys Leu			
65	70	75	80
Arg Gly Thr Asp Leu Ser Ser Gln Lys Phe Ala Thr Asp Ser Tyr Ile			
85	90	95	
Ala Asp Pro Tyr Ser Lys Asn Ile Tyr Ser Pro Gln Leu Phe Gly Ser			
100	105	110	
Pro Lys Gln Glu Lys Asp Tyr Ala Phe Ser Tyr Leu Lys His Glu Asp			
115	120	125	
Phe Asp Trp Glu Gly Asp Thr Pro Leu His Leu Pro Lys Glu Asn Tyr			
130	135	140	
Phe Ile Tyr Glu Met His Val Arg Ser Phe Thr Arg Asp Pro Ser Ser			
145	150	155	160
Gln Val Ser His Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp			
165	170	175	
His Leu Lys Gln Leu Gly Val His Ala Val Glu Leu Leu Pro Ile Phe			
180	185	190	
Glu Phe Asp Glu Thr Val His Pro Phe Lys Asn Gln Asp Phe Pro His			
195	200	205	
Leu Cys Asn Tyr Trp Gly Tyr Ser Ser Val Asn Phe Phe Cys Pro Ser			
210	215	220	
Arg Arg Tyr Thr Tyr Gly Ala Asp Pro Cys Ala Pro Ala Arg Glu Phe			
225	230	235	240

Lys Thr Leu Val Lys Ala Leu His Arg Ala Gly Ile Glu Val Ile Leu
 245 250 255
 Asp Val Val Phe Asn His Thr Gly Phe Glu Gly Thr Ser Cys Pro Leu
 260 265 270
 Pro Trp Ile Asp Leu Glu Ser Tyr Tyr Met Val Asn Asp His Gly Asp
 275 280 285
 Leu Met Asn Phe Ser Gly Cys Gly Asn Thr Val Asn Thr Asn Thr Pro
 290 295 300
 Thr Thr Leu Lys Trp Ile Leu Asp Ala Leu Arg Tyr Trp Val Gln Glu
 305 310 315 320
 Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe Ser Arg
 325 330 335
 Asp Pro Gln Gly Val Pro Leu Pro Leu Thr Pro Ile Leu Gln Ala Ile
 340 345 350
 Ser Ser Asp Ser Ile Leu Ser Glu Thr Lys Leu Ile Ala Glu Pro Trp
 355 360 365
 Asp Ala Gly Gly Leu Tyr Gln Leu Gly His Phe Pro Ser Ile Ser Thr
 370 375 380
 Arg Trp Ser Glu Trp Asn Gly Cys Tyr Arg Asp His Val Lys Ala Phe
 385 390 395 400
 Leu Asn Gly Asp Ala His Gln Val Ser Ser Phe Ala Ser Arg Ile Ser
 405 410 415
 Gly Ser His Asp Ile Tyr Pro Asn Gly Lys Pro Thr Asn Ser Ile Asn
 420 425 430
 Tyr Ile Cys Ser His Asp Gly Phe Thr Leu Tyr Asp Thr Val Ala Tyr
 435 440 445
 Asn Asp Lys His Asn Glu Glu Asn Gly Glu Tyr Asn Arg Asp Gly Thr
 450 455 460
 Ser Ala Asn Tyr Ser Tyr Asn Phe Gly Cys Glu Gly Glu Thr Thr Asp
 465 470 475 480
 Pro Thr Ile Cys Ala Leu Arg Glu Arg Gln Met Lys Asn Phe Phe Leu
 485 490 495
 Ala Leu Phe Leu Ser Gln Gly Ile Pro Met Ile Gln Ser Gly Asp Glu
 500 505 510
 Tyr Gly His Thr Ala Tyr Gly Asn Asn Asn His Trp Cys Leu Asp Thr
 515 520 525
 Lys Ile Asn Tyr Phe Leu Trp Asp Arg Leu Ala Glu Arg Lys Glu Leu
 530 535 540

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gttgagctca	ttggaacagt	tgctcttgaa	gaaggaatga	gatttgcaat	tcgtgaaggt	1140
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<210> 457

<211> 1656

<212> DNA

<213> Chlamydia pneumoniae

<400> 457

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gatacttttg	agaagttagg	gtttgctttg	gatttctttt	ctaggacgac	gaaccctttt	300
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<210> 458

<211> 294

<212> DNA

<213> Chlamydia pneumoniae

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<210> 459
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<210> 460
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<212> DNA
<213> Chlamydia pneumoniae
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<211> 975

<212> DNA

<213> Chlamydia pneumoniae

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<212> DNA

<213> Chlamydia pneumoniae

<400> 462

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<213> Chlamydia pneumoniae
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<211> 1632

<212> DNA

<213> Chlamydia pneumoniae

<400> 465

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<211> 312

<212> DNA

<213> Chlamydia pneumoniae

<400> 466

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<210> 467

<211> 1089

<212> DNA

<213> Chlamydia pneumoniae

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<211> 1308

<212> DNA

<213> Chlamydia pneumoniae

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<210> 471
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<213> Chlamydia pneumoniae

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<210> 472

<211> 1200

<212> DNA

<213> Chlamydia pneumoniae

<400> 472

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<210> 473

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 473

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<210> 474

<211> 741

<212> DNA

<213> Chlamydia pneumoniae

<400> 474

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<210> 475

<211> 1062

<212> DNA

<213> Chlamydia pneumoniae

<400> 475

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<210> 476
 <211> 561
 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 477
 <211> 3135
 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 478

<211> 1041

<212> DNA

<213> Chlamydia pneumoniae

<400> 478

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<210> 479

<211> 984

<212> DNA

<213> Chlamydia pneumoniae

<400> 479

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<210> 480

<211> 444

<212> DNA

<213> Chlamydia pneumoniae

<400> 480

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<210> 481

<211> 1581

<212> DNA

<213> Chlamydia pneumoniae

<400> 481

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<212> DNA

<213> Chlamydia pneumoniae

<400> 484

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tcattacgtc	gccacgtcct	ctctaaggtc	cttccagagc	tcccaggaga	aactcccctt	3660
gttctccatg	gtcaagtttc	ctatggaaga	aaccaccata	atatgacgac	aaagcttgcg	3720
aacaacacac	aagggaaatc	agactgggac	agccatagct	tcgctgttga	agtcggtggt	3780
tctcttctctg	tagatctaaa	ctacagatac	cttaccagct	actctcccta	tgtgaaactc	3840
caagttgtga	gtgtaaatac	aaaaggattc	caagaggttg	ctgctgatcc	acgtatcttt	3900
gacgctagcc	atctggtcaa	cgtgtctatc	cctatgggac	tcaccttcaa	acacgaatca	3960
gcaaagcccc	ccagtgtctt	gcttcttact	ttagggttacg	ctgtagatgc	ttaccgggat	4020
caccctcact	gcctgacctc	cttaacaaat	ggcacctcgt	ggtctacgtt	tgctacaaac	4080
ttatcacgac	aagctttctt	tgctgaggct	tctggacatc	tgaagttact	tcatggtctt	4140
gactgcttcg	cttctggaag	ttgtgaactg	cgcagctcct	caagaagcta	taatgcaaac	4200
tgtggaactc	gttattcttt	ctaa				4224

<210> 487

<211> 804

<212> DNA

<213> Chlamydia pneumoniae

<400> 487

atgggcaatt	caggtttcta	tttacaagat	actcaaaaca	ctattttcgc	agataacatt	60
cgtcttggtc	aatgaccac	agttcttaaa	aaagacgagg	ttattatagg	cacagataca	120
actccaacag	taacaaaatt	tagtggcgat	aaggggaattg	taattactac	agactcaacc	180
ataacacccat	ctagcactac	tttttctttg	gatatggaag	ctgtaatcaa	agaagtaaca	240
gataaaatct	taactcaaat	tgaagatgag	ttagtcaaag	acattataaa	aaacataact	300
caaagtctaa	tagaagaagt	aattaagaaa	atacacattg	atccttcttt	ctcatattct	360
agagcattta	aagatgttaa	tataactaat	aaaattcagt	gcaatgggtct	atttacaana	420
gaaaatatag	ggaattttaga	cggaggaaca	gaaatagctt	cgtcttcagt	aacacctgat	480
aatgctaata	gtatgttctt	aatttgtgcg	gatattatag	ccacacgcat	ggaaggaaca	540
gtggccttgg	cgtagttaa	agaaggagat	ttatctcctt	gctctattag	ttatggatac	600
tccgctggat	atccgaatat	aatttcacta	agagcaaccg	tcggaaacaa	aacaactgct	660
ccagttaaat	tctctttgag	agcaggaggg	atggatagtg	gtgttgtgtg	ggtaaatgct	720
atgccaaatg	gagaaaaaat	tttaggagtt	gacgcagttt	cgaagattac	tatcttagaa	780
gtaaaaccac	aaacaaatgg	ttaa				804

<210> 488

<211> 306

<212> DNA

<213> Chlamydia pneumoniae

<400> 488

atgaataaca	gacaaaacac	taatgacttt	atcagaattg	tgaaggatgt	tgaaaaggcg	60
tttccagaac	tagatatcaa	agtaaaaaata	gataaagaaa	aagttacttt	tttgacttct	120
ccaacagagc	tttatcacaa	aagtatatct	gtcatactca	atttactaaa	cagcattgaa	180
tcatctctag	accttttccc	agactctcca	gtagttgaag	aattagaaaa	aaataatctt	240
aagctcaaaa	aagctctgat	catgctaatt	ctatcaagaa	aagacatggt	ctcaaaaaaca	300
gaataa						306

<210> 489

<400> 489

<210> 490

<212> PRT

<213> Chlamydia pneumoniae

<400> 490

Met 1	Ser	Lys	His	Thr 5	Ser	Glu	Ser	Arg	Ile 10	Ala	Gln	Asp	Met	Leu 15	Glu
Arg	Tyr	Ser	Gly 20	Ser	Ser	Val	Lys	Gln 25	Phe	Cys	Pro	Tyr	Leu 30	Leu	Leu
Thr	Asn	Phe 35	Ser	Tyr	Tyr	Ile	Gln 40	Thr	Phe	Ala	Lys	Leu 45	His	Gly	Val
Pro	Val 50	Phe	Glu	Gly	Ser	Met 55	Phe	Ser	Ala	Ala	His 60	Ala	Pro	His	Leu
Lys 65	Thr	Ser	Ile	Leu	Asp 70	Phe	Lys	Leu	Gly	Ser 75	Pro	Gly	Ala	Ala	Leu
Thr	Ile	Asp	Leu	Cys 85	Ser	Phe	Leu	Pro	Asp 90	Leu	Lys	Ala	Ala	Leu 95	Met
Leu	Gly	Met	Cys 100	Gly	Gly	Leu	Arg	Ser 105	His	Tyr	Gln	Val	Gly 110	Asp	Tyr
Phe	Val 115	Pro	Val	Ala	Ser	Ile	Arg 120	Gly	Glu	Gly	Thr	Ser 125	Asp	Ala	Tyr
Phe	Pro 130	Pro	Glu	Val	Pro	Ala 135	Leu	Ala	Asn	Phe	Val 140	Val	Gln	Lys	Ala
Thr 145	Thr	Glu	Val	Leu	Glu 150	Asp	Lys	Lys	Ala	Asn 155	Tyr	His	Ile	Gly 160	Ile
Thr	His	Thr	Thr	Asn 165	Ile	Arg	Phe	Trp	Glu 170	Phe	Asn	Lys	Lys	Phe 175	Arg
Lys	Lys	Leu	Tyr 180	Glu	Thr	Lys	Ala 185	Gln	Ser	Ala	Glu	Met	Glu 190	Cys	Ala
Thr	Leu 195	Phe	Ala	Ala	Gly	Tyr	Arg 200	Arg	Asn	Leu	Pro	Ile 205	Gly	Ala	Leu
Leu	Leu 210	Ile	Ser	Asp	Leu	Pro 215	Leu	Arg	Lys	Glu	Gly 220	Ile	Lys	Thr	Lys
Ser 225	Ser	Gly	Asn	Phe	Ile 230	Phe	Asn	Thr	Tyr	Thr 235	Glu	Asp	His	Ile	Leu
Thr	Gly	Gln	Glu	Val	Ile	Glu	Asn	Leu	Glu	Lys	Val	Met	Leu	Lys	Arg

340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210> 492

<211> 560

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> (1)...(560)

<223> Xaa = Any Amino Acid

<400> 492

Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr Ala Asn Gly
 1 5 10 15
 Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro Ala Asp Val
 20 25 30
 Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu Tyr Ile Cys
 35 40 45
 Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala Asp Arg Glu
 50 55 60
 Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His Lys
 65 70 75 80
 Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe Ser Arg Thr
 85 90 95
 Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr Ser Gln Leu
 100 105 110
 Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln Leu Tyr Ser
 115 120 125
 Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu Gly Thr Cys
 130 135 140
 Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys Gln Ser Cys
 145 150 155 160
 Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Gly Pro Lys Ser Lys Ile
 165 170 175
 Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser Tyr Phe Leu
 180 185 190
 Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln Gly Cys Tyr
 195 200 205
 Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile Glu His Val
 210 215 220
 Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile Pro Val Pro
 225 230 235 240
 Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile Gly
 245 250 255
 Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly Asn Pro Asp
 260 265 270
 Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr Val Gln Phe
 275 280 285
 Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe Pro Ala Met
 290 295 300

Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala Leu Val Val
 305 310 315 320
 Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys Ser Glu Gly
 325 330 335
 Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser Leu Asp Lys
 340 345 350
 Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser Asp Ser Glu
 355 360 365
 Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu Leu Val Gly
 370 375 380
 Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala Glu Lys Asn
 385 390 395 400
 His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu Asp Ser Asp
 405 410 415
 Arg Ala Phe Leu Glu Glu Ala Arg Gln Leu Val Arg Asp Ala Glu Lys
 420 425 430
 Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val Ile Met Ser
 435 440 445
 Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala Pro Trp Lys
 450 455 460
 Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile Leu Phe Cys
 465 470 475 480
 Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Ile
 485 490 495
 Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro Lys Ser Leu
 500 505 510
 Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu Trp Lys Glu
 515 520 525
 Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys Ser Pro Arg
 530 535 540
 Leu Leu Phe Thr Thr Val Glu Thr Xaa Xaa Xaa Phe Xaa Xaa Xaa
 545 550 555 560

<210> 493

<211> 97

<212> PRT

<213> Chlamydia pneumoniae

<400> 493

Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn Lys Leu Phe
 1 5 10 15
 Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln Ala Lys Ile
 20 25 30
 Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Thr
 35 40 45
 Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe Thr Glu Glu
 50 55 60
 Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg Ser Glu His
 65 70 75 80
 Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp Ser Asp Val
 85 90 95

Lys

<210> 494

<211> 205

<212> PRT

<213> Chlamydia pneumoniae

<400> 494

Met	Asn	Lys	Ile	Leu	Val	Asp	Ser	Pro	Phe	Ser	Pro	Asp	His	Gln	Lys
1				5					10					15	
Cys	Cys	Pro	Lys	Leu	Phe	Thr	Ile	Ser	Ala	Pro	Ala	Gly	Val	Gly	Lys
			20					25					30		
Thr	Thr	Leu	Val	Arg	Met	Leu	Glu	Gln	Glu	Phe	Ser	Ser	Ala	Phe	Ala
		35					40					45			
Glu	Thr	Ile	Ser	Val	Thr	Thr	Arg	Lys	Pro	Arg	Glu	Gly	Glu	Val	Pro
	50					55					60				
Gly	Lys	Asp	Tyr	His	Phe	Val	Ser	His	Glu	Glu	Phe	Gln	Arg	Leu	Leu
65					70					75					80
Asp	Arg	Gln	Ala	Leu	Leu	Glu	Trp	Val	Phe	Leu	Phe	Gly	Glu	Cys	Tyr
				85					90					95	
Gly	Thr	Ser	Met	Leu	Glu	Ile	Glu	Arg	Ile	Trp	Ser	Leu	Gly	Lys	His
			100					105					110		
Ala	Val	Ala	Val	Ile	Asp	Ile	Gln	Gly	Ala	Leu	Phe	Ile	Arg	Ser	Arg
			115					120					125		
Met	Pro	Ser	Val	Ser	Ile	Phe	Ile	Ala	Pro	Pro	Ser	Gln	Glu	Glu	Leu
	130					135					140				
Glu	Arg	Arg	Leu	Ala	Ser	Arg	Gly	Ser	Glu	Glu	Gly	Ser	Gln	Arg	Lys
145						150				155					160
Glu	Arg	Leu	Glu	His	Ser	Leu	Ile	Glu	Leu	Ala	Ala	Ala	Asn	Gln	Phe
				165					170					175	
Asp	Tyr	Val	Ile	Ile	Asn	Asp	Asp	Leu	Asn	Gln	Ala	Tyr	Arg	Val	Leu
			180					185					190		
Lys	Ser	Ile	Phe	Ile	Ala	Glu	Glu	His	Arg	Asn	Ile	Leu			
		195					200					205			

<210> 495

<211> 602

<212> PRT

<213> Chlamydia pneumoniae

<400> 495

Met	Lys	Glu	Tyr	Lys	Ile	Glu	Asn	Ile	Arg	Asn	Phe	Ser	Ile	Ile	Ala
1				5					10					15	
His	Ile	Asp	His	Gly	Lys	Ser	Thr	Ile	Ala	Asp	Arg	Leu	Leu	Glu	Ser
			20					25					30		
Thr	Ser	Thr	Val	Glu	Glu	Arg	Glu	Met	Arg	Glu	Gln	Leu	Leu	Asp	Ser
		35					40					45			
Met	Asp	Leu	Glu	Arg	Glu	Arg	Gly	Ile	Thr	Ile	Lys	Ala	His	Pro	Val
	50					55					60				
Thr	Met	Thr	Tyr	Leu	Tyr	Glu	Gly	Glu	Val	Tyr	Gln	Leu	Asn	Leu	Ile
65				70						75					80
Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Leu
				85					90					95	
Ser	Ala	Cys	Glu	Gly	Ala	Leu	Leu	Ile	Val	Asp	Ala	Ala	Gln	Gly	Val
			100					105					110		
Gln	Ala	Gln	Ser	Leu	Ala	Asn	Val	Tyr	Leu	Ala	Leu	Glu	Arg	Asp	Leu
			115				120					125			
Glu	Ile	Ile	Pro	Val	Leu	Asn	Lys	Ile	Asp	Leu	Pro	Ala	Ala	Asp	Pro
	130					135					140				
Val	Arg	Ile	Ala	Gln	Gln	Ile	Glu	Asp	Tyr	Ile	Gly	Leu	Asp	Thr	Thr
145					150					155					160
Asn	Ile	Ile	Ala	Cys	Ser	Ala	Lys	Thr	Gly	Gln	Gly	Ile	Pro	Ala	Ile

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Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro Lys Ala Pro Ala Glu
165 170 175
Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His Tyr Asp Pro Tyr Val
180 185 190
Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly Glu Leu Lys Lys Gly
195 200 205
210 215 220
Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser Ser Phe Glu Val Leu
225 230 235 240
Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe Ile Glu Gly Ser Leu
245 250 255
Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn Leu Lys Lys Val Lys
260 265 270
Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr Lys His Pro Ala Lys
275 280 285
Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro Val Val Phe Ala Gly
290 295 300
Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu
305 310 315 320
Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Ser
325 330 335
Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu
340 345 350
His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg Glu Phe Asp Leu Asp
355 360 365
Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn
370 375 380
Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly Tyr Pro Asp Pro Ala
385 390 395 400
Ile Ile Glu His Val Glu Glu Pro Trp Val His Val Asn Ile Ile Thr
405 410 415
Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu Cys Leu Asp Lys Arg
420 425 430
Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln His Arg Leu Val Leu
435 440 445
Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys
450 455 460
Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly
465 470 475 480
Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu Val Leu Ile Asn Glu
485 490 495
Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His Arg Asp Lys Ala Glu
500 505 510
Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val Asp Val Ile Pro Gln
515 520 525
Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile Asn Lys Lys Val Ile
530 535 540
Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn Val Thr Ala Lys Cys
545 550 555 560
Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Glu Lys Gln Lys
565 570 575
Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn
580 585 590
Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
595 600

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<210> 496

<211> 324
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 496

Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Ala
 1 5 10 15
 Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser Leu Leu Ser Ser
 20 25 30
 Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys Leu Lys Glu Lys
 35 40 45
 Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His
 50 55 60
 Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu
 65 70 75 80
 Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val
 85 90 95
 Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe Val Leu Ile Gly
 100 105 110
 Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His Arg Asn Phe Gly
 115 120 125
 Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Gly Lys Leu
 130 135 140
 Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val Asp Thr Pro Gly
 145 150 155 160
 Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile
 165 170 175
 Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr Pro Val Ile Ile
 180 185 190
 Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Val
 195 200 205
 Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser
 210 215 220
 Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser
 225 230 235 240
 Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn Leu Lys Gln Phe
 245 250 255
 Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly Gly Ala His His
 260 265 270
 Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe Ile Ile Gln Glu
 275 280 285
 Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu Leu Glu Lys Arg
 290 295 300
 Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr Thr Ser Glu Ser
 305 310 315 320
 Gly Pro Glu Ala

<210> 497
 <211> 659
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 497

Met Lys Leu Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
 1 5 10 15
 Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser


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<210> 499
<211> 404
<212> PRT
<213> Chlamydia pneumoniae
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Met 1	Thr	Asn	Ser	Ala 5	Leu	Phe	Trp	Ile	Gly 10	Val	Asn	Ile	Ile	Cys 15	Ile
Val	Leu	Gln	Gly 20	Phe	Tyr	Ser	Met	Met 25	Glu	Met	Ala	Cys 30	Val	Ser	Phe
Asn	Arg	Val 35	Arg	Leu	Gln	Tyr	Tyr 40	Leu	Thr	Lys	Asp 45	His	Lys	Lys	Ala
Arg	Tyr 50	Ile	Asn	Phe	Leu	Ile 55	Arg	Arg	Pro	Tyr	Arg 60	Leu	Phe	Gly	Thr
Val 65	Met	Leu	Gly	Val	Asn 70	Ile	Ala	Leu	Gln	Val 75	Gly	Ser	Glu	Ser	Ser 80
Arg	Asn	Cys	Tyr	Arg 85	Ala	Leu	Gly	Ile	Thr 90	Pro	Asp	Tyr	Ala	Pro 95	Phe
Thr	Gln	Ile	Phe 100	Ile	Val	Val	Ile	Phe 105	Ala	Glu	Leu	Leu	Pro 110	Leu	Thr
Ile	Ser	Arg 115	Lys	Ile	Pro	Glu	Lys 120	Leu	Ala	Leu	Trp	Gly 125	Ala	Pro	Ile
Leu	Tyr 130	Tyr	Ser	His	Tyr	Ile 135	Phe	Tyr	Pro	Leu	Ile 140	Gln	Leu	Ile	Gly
Ser 145	Leu	Thr	Glu	Gly 150	Leu	Tyr	Tyr	Leu	Leu	Asn 155	Ile	Arg	Lys	Glu 160	Lys
Leu	Asn	Ser	Thr 165	Leu	Ser	Arg	Asp	Glu	Phe 170	Gln	Lys	Ala	Leu	Glu 175	Thr
His	His	Glu 180	Glu	Gln	Asp	Phe	Asn 185	Thr	Ile	Ala	Thr	Asn 190	Ile	Phe	Ser

Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val
 195 200 205
 Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile
 210 215 220
 Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys
 225 230 235 240
 Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn Lys Ala Leu
 245 250 255
 Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe Ile Thr Ala
 260 265 270
 Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp Asn Arg Ser
 275 280 285
 Ser Val Ala Val Val Leu Asn Ala Ser Gly Glu Pro Ile Gly Ile Leu
 290 295 300
 Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr Asn Ile Ala
 305 310 315 320
 His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr Phe Pro Gly
 325 330 335
 Asn Ser Arg Ile Lys Asp Leu Gln Lys Glu Leu Asp Ile Gln Phe Pro
 340 345 350
 Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln Leu Leu Asp
 355 360 365
 Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn Leu Leu Leu
 370 375 380
 Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val Ser Ile Lys
 385 390 395 400
 Asn Leu Leu Ser

<210> 500

<211> 543

<212> PRT

<213> Chlamydia pneumoniae

<400> 500

Met Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe
 1 5 10 15
 Ala Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr
 20 25 30
 Ser Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser
 35 40 45
 Ser Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr
 50 55 60
 Pro Glu Leu Ala His Asp Arg Asp Val Leu Glu Phe Gly Ile Gln
 65 70 75 80
 Val Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val
 85 90 95
 Ser Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu
 100 105 110
 Leu Leu Gln Ser Cys Asn Asp Asp Ser Ala Ile Val Arg Ser Leu Ala
 115 120 125
 Leu Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile
 130 135 140
 Val Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala
 145 150 155 160
 Tyr Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu
 165 170 175


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<210> 502
<211> 362
<212> PRT
<213> Chlamydia pneumoniae
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Met	Ala	Phe	Lys	Arg	Lys	Thr	Arg	Trp	Leu	Trp	Gln	Val	Leu	Ile	Leu
1				5					10					15	
Ser	Val	Gly	Leu	Asn	Met	Leu	Phe	Leu	Leu	Leu	Phe	Tyr	Ser	Ala	Ile
			20					25					30		
Phe	Arg	Lys	Asp	Ile	Tyr	Lys	Leu	His	Leu	Phe	Ser	Gly	Pro	Leu	Ile
		35				40						45			
Ala	Lys	Ser	Ser	Arg	Lys	Val	Tyr	Leu	Ser	Glu	Asp	Phe	Leu	Asn	Glu
	50					55				60					
Ile	Ser	Gln	Ala	Ser	Leu	Asp	Asp	Leu	Ile	Ser	Leu	Phe	Lys	Asp	Glu
65					70					75					80
Arg	Tyr	Met	Tyr	Gly	Arg	Pro	Ile	Lys	Leu	Trp	Ala	Leu	Ser	Val	Ala
				85					90					95	
Ile	Ala	Ser	His	Ile	Asp	Ile	Thr	Pro	Val	Leu	Ser	Lys	Pro	Leu	
			100				105					110			
Thr	Tyr	Thr	Glu	Leu	Lys	Gly	Ser	Ser	Val	Arg	Trp	Leu	Leu	Pro	Asn
		115					120					125			
Ile	Asp	Leu	Lys	Asp	Phe	Pro	Val	Ile	Leu	Asp	Tyr	Leu	Arg	Cys	His
	130					135					140				
Lys	Tyr	Pro	Tyr	Thr	Ser	Lys	Gly	Leu	Phe	Leu	Leu	Ile	Glu	Lys	Met
145					150					155					160
Val	Gln	Glu	Gly	Trp	Val	Asp	Glu	Asp	Cys	Leu	Tyr	His	Phe	Cys	Ser
				165					170					175	
Thr	Pro	Glu	Phe	Leu	Tyr	Leu	Arg	Thr	Leu	Leu	Val	Gly	Ala	Asp	Val
			180					185					190		
Gln	Ala	Ser	Ser	Val	Ala	Ser	Leu	Ala	Arg	Met	Val	Ile	Arg	Cys	Gly
		195					200					205			
Ser	Glu	Arg	Phe	Phe	His	Phe	Cys	Asn	Glu	Glu	Ser	Arg	Thr	Ser	Met
	210					215					220				
Ile	Ser	Ala	Thr	Gln	Arg	Gln	Lys	Val	Leu	Lys	Ser	Tyr	Leu	Asp	Cys
225					230					235					240
Glu	Glu	Ser	Leu	Ala	Ala	Leu	Leu	Leu	Leu	Val	His	Asp	Ser	Asp	Val
				245					250					255	
Val	Leu	His	Glu	Phe	Cys	Asp	Glu	Asp	Leu	Glu	Lys	Val	Ile	Arg	Leu
			260					265					270		
Met	Pro	Gln	Glu	Ser	Pro	Tyr	Ser	Gln	Asn	Phe	Phe	Ser	Arg	Leu	Gln
		275					280					285			
His	Ser	Pro	Arg	Arg	Glu	Leu	Ala	Cys	Met	Ser	Thr	Gln	Arg	Val	Glu
	290					295					300				
Ala	Pro	Arg	Val	Gln	Glu	Asp	Gln	Asp	Glu	Glu	Tyr	Val	Val	Gln	Asp
305					310						315				320

Val Leu Thr Ser Leu Arg Ile Glu Glu Arg Pro Trp Leu Arg Val Phe
 355 360 365
 Gly Gln Asn Val Tyr Leu Asp Glu Met Thr Pro Glu Ala Val Leu Pro
 370 375 380
 Phe Leu Arg Asn Ile Ala His Glu Ala Leu Asn Ala Glu Val Val Gln
 385 390 395 400
 Lys Tyr Leu Glu Glu Ser Glu Arg Val Phe Gly Ile Ala Val Glu Asp
 405 410 415
 Ile Val Pro Lys Lys Ile Ser Leu Ser Ser Leu Val Val Leu Ser Arg
 420 425 430
 Leu Leu Val Arg Glu Arg Val Ser Leu Lys Leu Phe Pro Lys Ile Leu
 435 440 445
 Glu Ala Val Ala Val Tyr Gln Asn Ser Gly Asp Ser Leu Glu Ile Leu
 450 455 460
 Ala Glu Lys Val Arg Lys Ser Leu Gly Tyr Trp Ile Gly Arg Ser Leu
 465 470 475 480
 Trp Asp Gln Lys Gln Thr Leu Glu Val Ile Thr Ile Asp Phe His Val
 485 490 495
 Glu Glu Leu Ile Asn Ser Ser Tyr Ser Lys Ser Asn Pro Val Met Gln
 500 505 510
 Glu Asn Val Ile Arg Arg Val Asp Ser Leu Leu Glu Arg Ser Val Phe
 515 520 525
 Lys Asp Phe Arg Ala Ile Val Thr Ser Cys Glu Thr Arg Phe Glu Met
 530 535 540
 Lys Lys Met Leu Asp Pro His Phe Pro Asp Leu Leu Val Leu Ser His
 545 550 555 560
 Asp Glu Leu Pro Lys Glu Ile Pro Ile Ser Phe Leu Gly Ile Val Ser
 565 570 575
 Asp Glu Val Leu Val Pro
 580

<210> 504

<211> 435

<212> PRT

<213> Chlamydia pneumoniae

<400> 504

Met Phe Ser Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr
 1 5 10 15
 Gly Cys Ser Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Ile Pro
 20 25 30
 Ile His Asp Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala
 35 40 45
 Met Asp Leu Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu
 50 55 60
 Thr His Arg Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr
 65 70 75 80
 Thr Val Ser Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser
 85 90 95
 Ala Leu Trp Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn
 100 105 110
 Ala Trp Glu Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln
 115 120 125
 Gly Leu Asn Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu
 130 135 140
 Asp Ser Pro Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe
 145 150 155 160

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<210> 505
<211> 171
<212> PRT
<213> Chlamydia pneumoniae
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Met	Lys	Lys	Leu	Leu	Phe	Ser	Thr	Phe	Leu	Leu	Val	Leu	Gly	Ser	Thr
1				5					10					15	
Ser	Ala	Ala	His	Ala	Asn	Leu	Gly	Tyr	Val	Asn	Leu	Lys	Arg	Cys	Leu
			20					25					30		
Glu	Glu	Ser	Asp	Leu	Gly	Lys	Lys	Glu	Thr	Glu	Glu	Leu	Glu	Ala	Met
		35					40					45			
Lys	Gln	Gln	Phe	Val	Lys	Asn	Ala	Glu	Lys	Ile	Glu	Glu	Glu	Leu	Thr
	50					55					60				
Ser	Ile	Tyr	Asn	Lys	Leu	Gln	Asp	Glu	Asp	Tyr	Met	Glu	Ser	Leu	Ser
65				70					75					80	
Asp	Ser	Ala	Ser	Glu	Glu	Leu	Arg	Lys	Lys	Phe	Glu	Asp	Leu	Ser	Gly
				85					90				95		
Glu	Tyr	Asn	Ala	Tyr	Gln	Ser	Gln	Tyr	Tyr	Gln	Ser	Ile	Asn	Gln	Ser
			100					105					110		

Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala
 115 120 125
 Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu
 130 135 140
 Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile
 145 150 155 160
 Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 165 170

<210> 506

<211> 360

<212> PRT

<213> Chlamydia pneumoniae

<400> 506

Met Ser Glu Ala Pro Val Tyr Thr Leu Lys Gln Leu Ala Glu Leu Leu
 1 5 10 15
 Gln Val Glu Val Gln Gly Asn Ile Glu Thr Pro Ile Ser Gly Val Glu
 20 25 30
 Asp Ile Ser Gln Ala Gln Pro His His Ile Ala Phe Leu Asp Asn Glu
 35 40 45
 Lys Tyr Ser Ser Phe Leu Lys Asn Thr Lys Ala Gly Ala Ile Ile Leu
 50 55 60
 Ser Arg Ser Gln Ala Met Gln His Ala His Leu Lys Lys Asn Phe Leu
 65 70 75 80
 Ile Thr Asn Glu Ser Pro Ser Leu Thr Phe Gln Lys Cys Ile Glu Leu
 85 90 95
 Phe Ile Glu Pro Val Thr Ser Gly Phe Pro Gly Ile His Pro Thr Ala
 100 105 110
 Val Ile His Pro Thr Ala Arg Ile Glu Lys Asn Val Thr Ile Glu Pro
 115 120 125
 Tyr Val Val Ile Ser Gln His Ala His Ile Gly Ser Asp Thr Tyr Ile
 130 135 140
 Gly Ala Gly Ser Val Ile Gly Ala His Ser Val Leu Gly Ala Asn Cys
 145 150 155 160
 Leu Ile His Pro Lys Val Val Ile Arg Glu Arg Val Leu Met Gly Asn
 165 170 175
 Arg Val Val Val Gln Pro Gly Ala Val Leu Gly Ser Cys Gly Phe Gly
 180 185 190
 Tyr Ile Thr Asn Ala Phe Gly His His Lys Pro Leu Lys His Leu Gly
 195 200 205
 Tyr Val Ile Val Gly Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile
 210 215 220
 Asp Arg Gly Arg Phe Lys Asn Thr Val Ile His Glu Gly Thr Lys Ile
 225 230 235 240
 Asp Asn Gln Val Gln Val Ala His His Val Glu Ile Gly Lys His Ser
 245 250 255
 Ile Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Glu
 260 265 270
 His Val Ile Ile Gly Gly Gln Thr Gly Ile Thr Gly His Ile Ser Ile
 275 280 285
 Ala Asp His Val Ile Met Ile Ala Gln Thr Gly Val Thr Lys Ser Ile
 290 295 300
 Thr Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu
 305 310 315 320
 Thr His Arg Leu Ile Ala Lys Ile Arg Asn Leu Pro Lys Thr Glu Glu
 325 330 335

Arg Leu Ser Lys Leu Glu Lys Gln Val Arg Asp Leu Ser Thr Pro Ser
 340 345 350
 Leu Ala Glu Ile Pro Ser Glu Ile
 355 360

<210> 507

<211> 399

<212> PRT

<213> Chlamydia pneumoniae

<400> 507

Met	Ala	Ala	Ser	Gly	Gly	Thr	Gly	Gly	Leu	Gly	Gly	Thr	Gln	Gly	Val
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Asn	Leu	Ala	Ala	Val	Glu	Ala	Ala	Ala	Ala	Lys	Ala	Asp	Ala	Ala	Glu
			20					25					30		
Val	Val	Ala	Ser	Gln	Glu	Gly	Ser	Glu	Met	Asn	Met	Ile	Gln	Gln	Ser
		35				40						45			
Gln	Asp	Leu	Thr	Asn	Pro	Ala	Ala	Ala	Thr	Arg	Thr	Lys	Lys	Lys	Glu
	50					55					60				
Glu	Lys	Phe	Gln	Thr	Leu	Glu	Ser	Arg	Lys	Lys	Gly	Glu	Ala	Gly	Lys
65					70				75						80
Ala	Glu	Lys	Lys	Ser	Glu	Ser	Thr	Glu	Glu	Lys	Pro	Asp	Thr	Asp	Leu
				85				90						95	
Ala	Asp	Lys	Tyr	Ala	Ser	Gly	Asn	Ser	Glu	Ile	Ser	Gly	Gln	Glu	Leu
			100					105					110		
Arg	Gly	Leu	Arg	Asp	Ala	Ile	Gly	Asp	Asp	Ala	Ser	Pro	Glu	Asp	Ile
	115						120					125			
Leu	Ala	Leu	Val	Gln	Glu	Lys	Ile	Lys	Asp	Pro	Ala	Leu	Gln	Ser	Thr
	130					135					140				
Ala	Leu	Asp	Tyr	Leu	Val	Gln	Thr	Thr	Pro	Pro	Ser	Gln	Gly	Lys	Leu
145					150					155					160
Lys	Glu	Ala	Leu	Ile	Gln	Ala	Arg	Asn	Thr	His	Thr	Glu	Gln	Phe	Gly
				165					170					175	
Arg	Thr	Ala	Ile	Gly	Ala	Lys	Asn	Ile	Leu	Phe	Ala	Ser	Gln	Glu	Tyr
			180					185					190		
Ala	Asp	Gln	Leu	Asn	Val	Ser	Pro	Ser	Gly	Leu	Arg	Ser	Leu	Tyr	Leu
	195						200					205			
Glu	Val	Thr	Gly	Asp	Thr	His	Thr	Cys	Asp	Gln	Leu	Leu	Ser	Met	Leu
	210					215					220				
Gln	Asp	Arg	Tyr	Thr	Tyr	Gln	Asp	Met	Ala	Ile	Val	Ser	Ser	Phe	Leu
225					230					235					240
Met	Lys	Gly	Met	Ala	Thr	Glu	Leu	Lys	Arg	Gln	Gly	Pro	Tyr	Val	Pro
				245					250					255	
Ser	Ala	Gln	Leu	Gln	Val	Leu	Met	Thr	Glu	Thr	Arg	Asn	Leu	Gln	Ala
			260					265					270		
Val	Leu	Thr	Ser	Tyr	Asp	Tyr	Phe	Glu	Ser	Arg	Val	Pro	Ile	Leu	Leu
		275					280					285			
Asp	Ser	Leu	Lys	Ala	Glu	Gly	Ile	Gln	Thr	Pro	Ser	Asp	Leu	Asn	Phe
	290					295					300				
Val	Lys	Val	Ala	Glu	Ser	Tyr	His	Lys	Ile	Ile	Asn	Asp	Lys	Phe	Pro
305					310					315					320
Thr	Ala	Ser	Lys	Val	Glu	Arg	Glu	Val	Arg	Asn	Leu	Ile	Gly	Asp	Asp
			325						330					335	
Val	Asp	Ser	Val	Thr	Gly	Val	Leu	Asn	Leu	Phe	Phe	Ser	Ala	Leu	Arg
			340					345					350		
Gln	Thr	Ser	Ser	Arg	Leu	Phe	Ser	Ser	Ala	Asp	Lys	Arg	Gln	Gln	Leu
		355					360						365		

Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn Glu
 370 375 380
 Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
 385 390 395

<210> 508

<211> 224

<212> PRT

<213> Chlamydia pneumoniae

<400> 508

Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
 1 5 10 15
 Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
 20 25 30
 Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
 35 40 45
 Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
 50 55 60
 Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
 65 70 75 80
 Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
 85 90 95
 Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
 100 105 110
 Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
 115 120 125
 Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
 130 135 140
 Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
 145 150 155 160
 Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
 165 170 175
 Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
 180 185 190
 Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
 195 200 205
 Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
 210 215 220

<210> 509

<211> 246

<212> PRT

<213> Chlamydia pneumoniae

<400> 509

Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr Asp Asp
 1 5 10 15
 Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu Arg Ser
 20 25 30
 Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
 35 40 45
 Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln Glu Ala
 50 55 60
 Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr Lys Lys
 65 70 75 80
 Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Val Glu

				85					90					95			
Gly	Tyr	Phe	Val	Leu	Tyr	Pro	Arg	Asp	Phe	Leu	Leu	Ser	Val	Asn	Thr		
			100					105					110				
Leu	Gly	Asp	Trp	Leu	Arg	Asn	Phe	Tyr	His	Leu	Glu	His	Cys	Gly	Ile		
		115					120					125					
Ile	Ile	Ser	Asp	Ser	His	Thr	Thr	Pro	Leu	Arg	Arg	Gly	Thr	Met	Gly		
	130					135					140						
Leu	Gly	Leu	Cys	Trp	Asn	Gly	Phe	Phe	Pro	Leu	Tyr	Asn	Tyr	Val	Gly		
145				150						155					160		
Lys	Pro	Asp	Cys	Phe	Gly	Arg	Ala	Leu	Lys	Met	Thr	Tyr	Ser	Asn	Leu		
			165						170					175			
Leu	Asp	Gly	Leu	Ser	Ala	Ala	Ala	Val	Leu	Cys	Met	Gly	Glu	Gly	Asp		
			180					185					190				
Glu	Gln	Thr	Pro	Ile	Ala	Ile	Ile	Glu	Glu	Ala	Pro	Lys	Ile	Thr	Phe		
	195						200					205					
His	Ser	Ser	Pro	Thr	Thr	Leu	Gln	Asp	Met	Ser	Thr	Leu	Ala	Ile	Ala		
	210					215					220						
Glu	Asp	Glu	Asp	Leu	Tyr	Gly	Pro	Leu	Leu	Gln	Ser	Met	Ala	Trp	Glu		
225				230						235					240		
Thr	Pro	Ala	Pro	Thr	Ser												
				245													

<210> 510
 <211> 353
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 510																	
Met	Asn	Lys	Arg	Gln	Lys	Asp	Lys	Leu	Lys	Ile	Cys	Val	Ile	Ile	Ser		
1				5					10					15			
Thr	Leu	Ile	Leu	Val	Gly	Ile	Phe	Ala	Arg	Ala	Pro	Arg	Gly	Asp	Thr		
			20					25					30				
Phe	Lys	Thr	Phe	Leu	Lys	Ser	Glu	Glu	Ala	Ile	Ile	Tyr	Ser	Asn	Gln		
	35						40					45					
Cys	Asn	Glu	Asp	Met	Arg	Lys	Ile	Leu	Cys	Asp	Ala	Ile	Glu	His	Ala		
	50					55					60						
Asp	Glu	Glu	Ile	Phe	Leu	Arg	Ile	Tyr	Asn	Leu	Ser	Glu	Pro	Lys	Ile		
65				70						75				80			
Gln	Gln	Ser	Leu	Thr	Arg	Gln	Ala	Gln	Ala	Lys	Asn	Lys	Val	Thr	Ile		
			85						90					95			
Tyr	Tyr	Gln	Lys	Phe	Lys	Ile	Pro	Gln	Ile	Leu	Lys	Gln	Ala	Ser	Asn		
		100						105					110				
Val	Thr	Leu	Val	Glu	Gln	Pro	Pro	Ala	Gly	Arg	Lys	Leu	Met	His	Gln		
	115						120					125					
Lys	Ala	Leu	Ser	Ile	Asp	Lys	Lys	Asp	Ala	Trp	Leu	Gly	Ser	Ala	Asn		
	130					135					140						
Tyr	Thr	Asn	Leu	Ser	Leu	Arg	Leu	Asp	Asn	Asn	Leu	Ile	Leu	Gly	Met		
145				150						155					160		
His	Ser	Ser	Glu	Leu	Cys	Asp	Leu	Ile	Ile	Thr	Asn	Thr	Ser	Gly	Asp		
			165						170					175			
Phe	Ser	Ile	Lys	Asp	Gln	Thr	Gly	Lys	Tyr	Phe	Val	Leu	Pro	Gln	Asp		
		180						185					190				
Arg	Lys	Ile	Ala	Ile	Gln	Ala	Val	Leu	Glu	Lys	Ile	Gln	Thr	Ala	Gln		
	195						200					205					
Lys	Thr	Ile	Gln	Val	Ala	Met	Phe	Ala	Leu	Thr	His	Ser	Glu	Ile	Ile		
	210					215					220						
Gln	Ala	Leu	His	Gln	Ala	Lys	Gln	Arg	Gly	Ile	His	Val	Asp	Ile	Ile		

225 230 235 240
 Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln Leu
 245 250 255
 Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr Leu
 260 265 270
 His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly Ser
 275 280 285
 Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu Ile
 290 295 300
 Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met Ile
 305 310 315 320
 Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp Glu
 325 330 335
 Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu Ala
 340 345 350
 Ala

<210> 511
 <211> 186
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 511
 Met Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys Val
 1 5 10 15
 Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile Lys
 20 25 30
 Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu Val
 35 40 45
 Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly Lys
 50 55 60
 Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala Gln
 65 70 75 80
 His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp Glu
 85 90 95
 Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu Lys
 100 105 110
 Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu Ala
 115 120 125
 Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly Leu
 130 135 140
 Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg Ser
 145 150 155 160
 Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys Gln
 165 170 175
 Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210> 512
 <211> 276
 <212> PRT
 <213> Chlamydia pneumoniae

<220>
 <221> VARIANT
 <222> (1)...(276)

<223> Xaa = Any Amino Acid

<400> 512

Met	Gly	Asn	Ser	Gly	Phe	Tyr	Leu	Gln	Asp	Thr	Gln	Asn	Thr	Ile	Phe
1				5					10					15	
Ala	Asp	Asn	Ile	Arg	Leu	Gly	Gln	Met	Thr	Thr	Val	Leu	Lys	Lys	Asp
			20					25					30		
Glu	Val	Ile	Ile	Gly	Thr	Asp	Thr	Thr	Pro	Thr	Val	Thr	Lys	Phe	Ser
		35					40					45			
Gly	Asp	Lys	Gly	Ile	Val	Ile	Thr	Thr	Asp	Ser	Thr	Ile	Thr	Pro	Ser
	50					55					60				
Ser	Thr	Thr	Phe	Ser	Leu	Asp	Met	Glu	Ala	Val	Ile	Lys	Glu	Val	Thr
65					70				75						80
Asp	Lys	Ile	Leu	Thr	Gln	Ile	Glu	Asp	Glu	Leu	Val	Lys	Asp	Ile	Ile
				85					90					95	
Lys	Asn	Ile	Thr	Gln	Ser	Leu	Ile	Glu	Glu	Val	Ile	Lys	Lys	Ile	His
			100					105					110		
Ile	Asp	Pro	Ser	Phe	Ser	Tyr	Ser	Arg	Ala	Phe	Lys	Asp	Val	Asn	Ile
	115						120					125			
Thr	Asn	Lys	Ile	Gln	Cys	Asn	Gly	Leu	Phe	Thr	Lys	Glu	Asn	Ile	Gly
	130					135					140				
Asn	Leu	Asp	Gly	Gly	Thr	Glu	Ile	Ala	Ser	Ser	Ser	Val	Thr	Pro	Asp
145						150				155					160
Asn	Ala	Asn	Ser	Met	Phe	Leu	Ile	Cys	Ala	Asp	Ile	Ile	Ala	Thr	Arg
				165					170					175	
Met	Glu	Gly	Thr	Val	Ala	Leu	Ala	Leu	Val	Lys	Glu	Gly	Asp	Leu	Ser
			180					185					190		
Pro	Cys	Ser	Ile	Ser	Tyr	Gly	Tyr	Ser	Ala	Gly	Tyr	Pro	Asn	Ile	Ile
		195					200					205			
Ser	Leu	Arg	Ala	Thr	Val	Gly	Asn	Lys	Thr	Thr	Ala	Pro	Val	Lys	Phe
	210					215					220				
Ser	Leu	Arg	Ala	Gly	Gly	Met	Asp	Ser	Gly	Val	Val	Trp	Val	Asn	Ala
					230					235					240
Met	Pro	Asn	Gly	Glu	Lys	Ile	Leu	Gly	Val	Asp	Ala	Val	Ser	Lys	Ile
				245					250					255	
Thr	Ile	Leu	Glu	Val	Lys	Pro	Gln	Thr	Asn	Gly	Thr	Xaa	Xaa	Xaa	Xaa
			260					265					270		
Phe	Xaa	Xaa	Xaa												
			275												

<210> 513

<211> 1044

<212> PRT

<213> Chlamydia pneumoniae

<400> 513

Met	Val	Glu	Val	Glu	Glu	Lys	His	Tyr	Thr	Ile	Val	Lys	Arg	Asn	Gly
1					5				10					15	
Met	Phe	Val	Pro	Phe	Asn	Gln	Asp	Arg	Ile	Phe	Gln	Ala	Leu	Glu	Ala
			20					25					30		
Ala	Phe	Arg	Asp	Thr	Arg	Ser	Leu	Glu	Thr	Ser	Ser	Pro	Leu	Pro	Lys
		35					40					45			
Asp	Leu	Glu	Glu	Ser	Ile	Ala	Gln	Ile	Thr	His	Lys	Val	Val	Lys	Glu
	50					55					60				
Val	Leu	Ala	Lys	Ile	Ser	Glu	Gly	Gln	Val	Val	Thr	Val	Glu	Arg	Ile
65					70					75					80
Gln	Asp	Leu	Val	Glu	Ser	Gln	Leu	Tyr	Ile	Ser	Gly	Leu	Gln	Asp	Val

Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
				565					570					575	
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
		595					600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
	610					615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650					655	
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
		675						680				685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
	690					695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
				725					730					735	
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
		755					760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
	770					775					780				
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
				805					810					815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
		835					840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
	850					855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865					870					875					880
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys
				885					890					895	
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys
		900						905				910			
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu
		915					920					925			
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile
	930					935					940				
Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	Val	Ser	Leu
945					950					955					960
Asn	Leu	Tyr	Leu	Ala	Glu	Pro	Asp	Gly	Lys	Lys	Leu	Ser	Asn	Met	Tyr
				965					970					975	
Leu	Thr	Ala	Trp	Lys	Lys	Gly	Leu	Lys	Thr	Thr	Tyr	Tyr	Leu	Arg	Ser
			980					985					990		
Gln	Ala	Ala	Thr	Ser	Val	Glu	Lys	Ser	Phe	Ile	Asp	Ile	Asn	Lys	Arg

995 1000 1005
 Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile
 1010 1015 1020
 Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys
 1025 1030 1035 1040
 Glu Ser Cys Gln

<210> 514
 <211> 346
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 514
 Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val Glu Val Ser
 1 5 10 15
 Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
 Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile Glu Leu
 50 55 60
 Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln Met Thr
 145 150 155 160
 Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser Ser Glu
 165 170 175
 Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln Glu Glu
 245 250 255
 Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu Tyr Ala
 260 265 270
 Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met Ser Glu
 305 310 315 320
 Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Thr
 325 330 335
 Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp

340

345

<210> 515
 <211> 327
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 515
 Met Asp Ala Lys Met Gly Tyr Ile Phe Lys Val Met Arg Trp Ile Phe
 1 5 10 15
 Cys Phe Val Ala Cys Gly Ile Thr Phe Gly Cys Thr Asn Ser Gly Phe
 20 25 30
 Gln Asn Ala Asn Ser Arg Pro Cys Ile Leu Ser Met Asn Arg Met Ile
 35 40 45
 His Asp Cys Val Glu Arg Val Val Gly Asn Arg Leu Ala Thr Ala Val
 50 55 60
 Leu Ile Lys Gly Ser Leu Asp Pro His Ala Tyr Glu Met Val Lys Gly
 65 70 75 80
 Asp Lys Asp Lys Ile Ala Gly Ser Ala Val Ile Phe Cys Asn Gly Leu
 85 90 95
 Gly Leu Glu His Thr Leu Ser Leu Arg Lys His Leu Glu Asn Asn Pro
 100 105 110
 Asn Ser Val Lys Leu Gly Glu Arg Leu Ile Ala Arg Gly Ala Phe Val
 115 120 125
 Pro Leu Glu Glu Asp Gly Ile Cys Asp Pro His Ile Trp Met Asp Leu
 130 135 140
 Ser Ile Trp Lys Glu Ala Val Ile Glu Ile Thr Glu Val Leu Ile Glu
 145 150 155 160
 Lys Phe Pro Glu Trp Ser Ala Glu Phe Lys Ala Asn Ser Glu Glu Leu
 165 170 175
 Val Cys Glu Met Ser Ile Leu Asp Ser Trp Ala Lys Gln Cys Leu Ser
 180 185 190
 Thr Ile Pro Glu Asn Leu Arg Tyr Leu Val Ser Gly His Asn Ala Phe
 195 200 205
 Ser Tyr Phe Thr Arg Arg Tyr Leu Ala Thr Pro Glu Glu Val Ala Ser
 210 215 220
 Gly Ala Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser Pro Glu
 225 230 235 240
 Ala Gln Ile Ser Val Arg Asp Ile Met Ala Val Val Asp Tyr Ile Asn
 245 250 255
 Glu His Asp Val Ser Val Val Phe Pro Glu Asp Thr Leu Asn Gln Asp
 260 265 270
 Ala Leu Lys Lys Ile Val Ser Ser Leu Lys Lys Ser His Leu Val Arg
 275 280 285
 Leu Ala Gln Lys Pro Leu Tyr Ser Asp Asn Val Asp Asp Asn Tyr Phe
 290 295 300
 Ser Thr Phe Lys His Asn Val Cys Leu Ile Thr Glu Glu Leu Gly Gly
 305 310 315 320
 Val Ala Leu Glu Cys Gln Arg
 325

<210> 516
 <211> 101
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 516

Met Asn Asn Arg Gln Asn Thr Asn Asp Phe Ile Arg Ile Val Lys Asp
 1 5 10 15
 Val Glu Lys Ala Phe Pro Glu Leu Asp Ile Lys Val Lys Ile Asp Lys
 20 25 30
 Glu Lys Val Thr Phe Leu Thr Ser Pro Thr Glu Leu Tyr His Lys Ser
 35 40 45
 Ile Ser Val Ile Leu Asn Leu Asn Ser Ile Glu Ser Ser Leu Asp
 50 55 60
 Leu Phe Pro Asp Ser Pro Val Val Glu Glu Leu Glu Lys Asn Asn Leu
 65 70 75 80
 Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp Met
 85 90 95
 Phe Ser Lys Thr Glu
 100

<210> 517

<211> 261

<212> PRT

<213> Chlamydia pneumoniae

<400> 517

Met Lys Thr Ile Ala Phe Cys Ser Phe Lys Gly Gly Thr Gly Lys Thr
 1 5 10 15
 Thr Leu Ser Leu Asn Val Gly Cys Asn Leu Ala Gln Tyr Ser Asn Lys
 20 25 30
 Lys Val Leu Leu Val Asp Leu Asp Pro Gln Ala Asn Leu Thr Thr Gly
 35 40 45
 Leu Gly Val Gln Ser Cys Tyr Glu Ser Asn Leu Asn Asp Ile Phe Arg
 50 55 60
 Ser Ser Gly Asn Val Arg Asp Ile Ile Gln Asp Thr Lys Ile Glu Asn
 65 70 75 80
 Leu His Ile Val Pro Ser Ser Ile Leu Ile Glu Glu Phe Arg Glu Phe
 85 90 95
 Asn Arg Asn Ser Val Leu Asp Thr Ser His Leu Arg Ser Ser Leu Gln
 100 105 110
 Leu Ile Glu Ser Asn Tyr Asp Leu Cys Ile Leu Asp Thr Pro Pro Ser
 115 120 125
 Leu Gly Thr Leu Thr Glu Glu Ala Phe Ile Ala Ser Asp His Leu Ile
 130 135 140
 Val Cys Leu Thr Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile
 145 150 155 160
 Lys Glu Phe Cys Ser Val Leu Pro Lys Lys Lys Asp Leu Ser Val Leu
 165 170 175
 Gly Ile Val Phe Ser Phe Trp Asp Gly Arg Asn Ser Thr Asn Ser Thr
 180 185 190
 Tyr Leu Asn Ile Ile Glu Ser Ile Tyr Glu Gly Lys Val Leu Ser Ser
 195 200 205
 Lys Val Arg Arg Asp Ile Thr Leu Ser Arg Ser Leu Leu Lys Glu Thr
 210 215 220
 Ser Ile Ala Asn Ala Tyr Pro Asn Ser Arg Ala Ser His Asp Ile Leu
 225 230 235 240
 Arg Leu Thr Lys Glu Ile Glu Asp Lys Leu Phe Asn Lys Glu Met Ser
 245 250 255
 Ala Gln Glu Val Leu
 260

<210> 518

<211> 526
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 518

Met	Asn	Val	Leu	Lys	Tyr	Thr	Lys	His	Ser	Pro	Ser	Ala	His	Ala	Trp
1				5					10					15	
Lys	Leu	Ile	Gly	Thr	Ser	Pro	Lys	His	Gly	Ile	Tyr	Leu	Pro	Leu	Phe
			20					25					30		
Ser	Ile	His	Thr	Lys	Asn	Ser	Cys	Gly	Ile	Gly	Glu	Phe	Leu	Asp	Leu
		35					40					45			
Ile	Pro	Leu	Ile	Ser	Trp	Cys	Gln	Lys	Gln	Gly	Phe	Ser	Val	Ile	Gln
	50					55					60				
Leu	Leu	Pro	Leu	Asn	Asp	Thr	Gly	Glu	Asp	Thr	Ser	Pro	Tyr	Asn	Ser
65					70					75					80
Ile	Ser	Ser	Val	Ala	Leu	Asn	Pro	Leu	Phe	Leu	Ser	Leu	Ser	Ser	Leu
				85					90					95	
Pro	Asn	Ile	Asp	Thr	Ile	Pro	Glu	Val	Ala	Lys	Lys	Leu	Gln	Asp	Met
			100					105					110		
His	Glu	Leu	Cys	Ser	Thr	Pro	Ser	Val	Ser	Tyr	Thr	Gln	Val	Lys	Glu
		115					120					125			
Lys	Lys	Trp	Ala	Phe	Leu	Arg	Glu	Tyr	Tyr	Gln	Lys	Cys	Cys	Lys	Ser
	130						135				140				
Ser	Leu	Glu	Gly	Asn	Ser	Asn	Phe	Ser	Glu	Phe	Leu	Glu	Ser	Glu	Arg
145					150					155					160
Tyr	Trp	Leu	Tyr	Pro	Tyr	Gly	Thr	Phe	Arg	Ala	Ile	Lys	His	His	Met
				165					170					175	
His	Gly	Glu	Pro	Ile	Asn	Asn	Trp	Pro	Lys	Ser	Leu	Thr	Asp	Gln	Glu
			180					185					190		
Asn	Phe	Pro	Asp	Leu	Thr	Lys	Lys	Phe	His	Asp	Glu	Val	Leu	Phe	Phe
		195					200					205			
Ser	Tyr	Leu	Gln	Phe	Leu	Cys	Tyr	Gln	Gln	Leu	Cys	Glu	Val	Lys	Ala
	210					215					220				
Tyr	Ala	Asp	Gln	His	His	Val	Leu	Leu	Lys	Gly	Asp	Leu	Pro	Ile	Leu
225					230					235					240
Ile	Ser	Lys	Asp	Ser	Cys	Asp	Val	Trp	Tyr	Phe	Arg	Asp	Tyr	Phe	Ser
				245					250					255	
Ser	Ser	Arg	Ser	Val	Gly	Ala	Pro	Pro	Asp	Leu	Tyr	Asn	Ser	Glu	Gly
			260					265					270		
Gln	Asn	Trp	His	Leu	Pro	Ile	Tyr	Asn	Phe	Ser	Gln	Leu	Ala	Lys	Asp
		275					280					285			
Asp	Tyr	Ile	Trp	Trp	Lys	Glu	Arg	Leu	Arg	Tyr	Ala	Gln	Asn	Phe	Tyr
	290					295					300				
Ser	Val	Tyr	Arg	Leu	Asp	His	Ile	Ile	Gly	Phe	Phe	Arg	Leu	Trp	Ile
305					310					315					320
Trp	Asp	Ser	Ser	Gly	Arg	Gly	Arg	Phe	Ile	Pro	Asp	Asn	Pro	Lys	Asp
				325					330					335	
Tyr	Ile	Lys	Gln	Gly	Thr	Glu	Ile	Leu	Ser	Thr	Met	Leu	Gly	Ala	Ser
			340					345					350		
Ser	Met	Leu	Pro	Ile	Gly	Glu	Asp	Leu	Gly	Ile	Ile	Pro	Gln	Asp	Val
		355					360					365			
Lys	Thr	Thr	Leu	Thr	His	Leu	Gly	Ile	Cys	Gly	Thr	Arg	Ile	Pro	Arg
	370					375					380				
Trp	Glu	Arg	Asn	Trp	Glu	Ser	Asp	Ser	Ala	Phe	Ile	Pro	Leu	Lys	Asp
385					390					395					400
Tyr	Asn	Pro	Leu	Ser	Val	Thr	Thr	Leu	Ser	Thr	His	Asp	Ser	Asp	Thr
				405					410					415	

Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
 485 490 495
 Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
 500 505 510
 Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
 515 520 525

<210> 519

<211> 147

<212> PRT

<213> Chlamydia pneumoniae

<400> 519

Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu Ala Pro Leu Leu
 1 5 10 15
 Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys Leu Ile Arg Phe
 20 25 30
 Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
 35 40 45
 Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro Glu Asn Val Phe
 50 55 60
 Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn Gly Ser Phe Gln
 65 70 75 80
 Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val Thr Gln Gln Leu
 85 90 95
 Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn Gly Glu Lys Leu
 100 105 110
 Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys Ile Trp Met Glu
 115 120 125
 Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val Leu Gly Ile Tyr
 130 135 140
 Tyr Val Ala
 145

<210> 520

<211> 635

<212> PRT

<213> Chlamydia pneumoniae

<400> 520

Met Ile Pro Phe Thr Lys Thr Ile Gly Phe Arg Leu Trp Leu Ala Cys
 1 5 10 15
 Ala Val Ala Ile Ile Ala Pro Leu Gly Ile Asn Ile Val Trp Leu Asn
 20 25 30
 Leu Asp Gln Tyr Arg Thr Ile Val Ser Ala Ile Ser Thr Ala Leu Lys
 35 40 45
 Glu Asn Ala Ala Phe Lys Ala Asn Thr Leu Thr Gln Ile Val Pro Leu
 50 55 60
 Asn Val Asp Val Leu Ser Leu Phe Ser Asp Val Leu Asp Leu Asp Ala

65					70					75					80
Gly	Ile	Pro	Glu	Thr	Pro	Asn	Val	Leu	Leu	Ser	Asn	Glu	Met	Gln	Lys
				85					90					95	
Val	Phe	Gln	Gly	Ile	Tyr	Asn	Glu	Ile	Ser	Leu	Ile	Lys	Val	Phe	Pro
			100					105					110		
Asn	Gly	Asp	Lys	Ile	Val	Val	Ala	Ser	Ser	Ile	Pro	Glu	His	Leu	Gly
		115					120					125			
Glu	Asn	Tyr	Asn	His	Lys	Ile	Asp	Ile	Pro	Lys	Asn	Thr	Pro	Phe	Leu
	130					135					140				
Ala	Ala	Leu	Lys	Gln	Ser	Pro	Lys	Asn	Gln	Glu	Val	Phe	Ser	Val	Met
145					150				155						160
Gln	Ala	Asn	Val	Phe	Asp	Ala	Lys	Thr	Gln	Glu	Leu	Gln	Gly	Ile	Leu
				165					170					175	
Tyr	Thr	Thr	Phe	Ser	Ala	Glu	Ser	Leu	Leu	Lys	Asp	Leu	Leu	Ile	Asn
			180					185					190		
Lys	Gln	Ser	Tyr	Leu	Thr	Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Tyr	Gly
		195					200					205			
Val	Ile	Leu	Lys	Ala	Ser	Asp	Pro	Ala	Leu	His	Leu	His	Thr	Val	Tyr
	210					215					220				
Pro	Asp	Met	Thr	Lys	Glu	Lys	Phe	Cys	Gln	Val	Phe	Leu	Asn	Asp	Asp
225					230				235						240
Pro	Cys	Pro	Ile	Asp	Ser	Glu	Leu	Gly	Pro	Leu	Thr	Leu	Ser	Pro	Leu
				245					250					255	
Asp	Ile	Gly	Glu	Asn	Phe	Tyr	Ser	Phe	Lys	Ile	Lys	Asp	Thr	Glu	Ile
			260					265					270		
Trp	Gly	Cys	Ile	Glu	Asn	Val	Pro	Ser	Ile	Asp	Ile	Ala	Val	Leu	Ser
		275					280					285			
Tyr	Ala	Lys	Lys	Glu	Glu	Ser	Phe	Ala	Pro	Leu	Trp	Arg	Arg	Ala	Arg
	290					295					300				
Met	Tyr	Thr	Ala	Tyr	Phe	Cys	Ile	Leu	Leu	Gly	Ser	Leu	Ile	Ala	
305					310				315					320	
Phe	Ile	Val	Ala	Arg	Arg	Leu	Ser	Leu	Pro	Ile	Arg	Lys	Leu	Ala	Thr
				325					330					335	
Ala	Met	Ile	Glu	Ser	Arg	Lys	Asn	Lys	Asn	Cys	Leu	Tyr	Thr	Asp	Asp
			340					345					350		
Ser	Leu	Gly	Phe	Glu	Ile	Asn	Arg	Leu	Gly	His	Ile	Phe	Asn	Ala	Met
		355					360					365			
Val	Glu	Asn	Leu	His	Lys	Gln	Gln	His	Leu	Ala	Lys	Thr	Asn	Phe	Glu
	370					375					380				
Met	Lys	Glu	Asn	Ala	Gln	Asn	Ala	Leu	His	Leu	Gly	Glu	Gln	Ala	Gln
385					390					395					400
Gln	Arg	Leu	Leu	Pro	Asn	Thr	Leu	Pro	Ser	Tyr	Pro	His	Ile	Glu	Leu
				405					410					415	
Ala	Lys	Ala	Tyr	Ile	Pro	Ala	Ile	Thr	Val	Gly	Gly	Asp	Phe	Phe	Asp
			420					425					430		
Val	Phe	Val	Val	Gly	Glu	Gly	Ser	Lys	Ala	Arg	Leu	Phe	Leu	Ile	Val
		435					440					445			
Ala	Asp	Ala	Ser	Gly	Lys	Gly	Val	Asn	Ala	Cys	Gly	Tyr	Ser	Leu	Phe
	450					455					460				
Leu	Lys	Asn	Met	Leu	Arg	Thr	Phe	Leu	Ser	Arg	Ser	Ser	Ser	Leu	Gln
465					470					475					480
Gln	Ala	Ile	Gln	Glu	Thr	Ser	Arg	Leu	Phe	Tyr	Asn	Asn	Thr	Lys	Asn
				485					490					495	
Ser	Gly	Met	Phe	Val	Thr	Leu	Cys	Val	Tyr	Cys	Tyr	His	Gln	Thr	Ser
			500					505					510		
Asn	Thr	Met	Glu	Tyr	Tyr	Ser	Cys	Gly	His	Pro	Pro	Ala	Cys	Tyr	Leu
		515					520					525			

Asp Pro Asp Gly Glu Thr Ser Trp Leu Phe His Pro Gly Met Ala Leu
 530 535 540
 Gly Phe Leu Pro Glu Val Ala Asn Ile Thr Ser Lys Leu Phe His Pro
 545 550 555 560
 Lys Pro Gly Ser Leu Phe Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala
 565 570 575
 His Asn Asn Asn Asn Asp Met Phe Gly Glu Glu Arg Leu Gln Ala Ala
 580 585 590
 Ile Gln Gly Leu Thr Gly Lys Ser Ala Ala Asp Ala Val His Arg Leu
 595 600 605
 Met Leu Ser Val Lys Thr Phe Val Gly Asn Ser His Gln His Asp Asp
 610 615 620
 Ile Thr Leu Leu Ile Leu Lys Val Leu Glu Ser
 625 630 635

<210> 521

<211> 314

<212> PRT

<213> Chlamydia pneumoniae

<400> 521

Met Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu Leu Ser Leu
 1 5 10 15
 Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr Ile Pro Gly
 20 25 30
 Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu Glu Val Leu
 35 40 45
 Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu Tyr Gln Gln
 50 55 60
 Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe Gly Asn Ser
 65 70 75 80
 Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser Thr Ala Phe
 85 90 95
 Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu Ser Ile Gly
 100 105 110
 Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys Lys Gln
 115 120 125
 Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser Ile Pro Ala
 130 135 140
 Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val Lys Ile Pro
 145 150 155 160
 Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr Ile Leu Pro
 165 170 175
 Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile Gln Leu Thr
 180 185 190
 Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val Leu Leu Ala
 195 200 205
 Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys His Ile Leu
 210 215 220
 Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
 225 230 235 240
 Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe Cys Ile Pro
 245 250 255
 Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
 260 265 270
 Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Leu Phe Met Leu Ser
 275 280 285

Ser Leu Leu Ser Asp Leu Ile Gln Ser Ile Ile Asp Pro Gln Ile Arg
 290 295 300
 Tyr Ala His Gly Lys Glu Lys Lys Arg Lys
 305 310

<210> 522

<211> 1240

<212> PRT

<213> Chlamydia pneumoniae

<400> 522

Met Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser Val Leu Asp
 1 5 10 15
 Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln Glu Phe Gly
 20 25 30
 Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr Gly Ala Val
 35 40 45
 Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro Ile Ile Gly
 50 55 60
 Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys Lys Lys Glu
 65 70 75 80
 Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys Lys Asn Glu
 85 90 95
 Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala Phe Thr Glu
 100 105 110
 Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu Arg Gln Tyr
 115 120 125
 Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser Ser Val Ser
 130 135 140
 Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Glu Leu Gln Trp
 145 150 155 160
 Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val Gln Leu His
 165 170 175
 Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu Trp Leu Lys
 180 185 190
 Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val Asn Thr Ala
 195 200 205
 Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val Ala Thr Asn
 210 215 220
 Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His Glu Ile Leu
 225 230 235 240
 Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys Gln Asn Thr
 245 250 255
 His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg Glu Tyr Tyr
 260 265 270
 Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp Ile Pro Glu
 275 280 285
 Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp Phe Thr Phe
 290 295 300
 Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu Ser Leu Lys
 305 310 315 320
 Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala Ser Ala Val
 325 330 335
 Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys Tyr Ser Ser
 340 345 350
 Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg Asp Pro Ile
 355 360 365

Asp	Ile	Val	Lys	Glu	Arg	Met	Asp	Met	Glu	Met	Ala	Ile	Ile	Ile	Pro
370						375					380				
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	His	Trp
385					390					395					400
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Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Leu	Ser
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Phe	Glu	Glu	Ile	Ile	Ala	Met	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro	Met
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 Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe Val Ala Thr
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 1075 1080 1085
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 Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln Lys Met Ser
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<211> 576

<212> PRT

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<400> 523

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Ile	Val 50	Leu	Ile	Ile	Gly	Thr 55	Pro	Leu	Gly	Ala	Pro 60	Ile	Ser	Met Ile
Leu 65	Gly	Gly	Cys	Leu	Leu 70	Ala	Ser	Gly	Gly	Ala 75	Leu	Phe	Val	Gly Gly 80
Thr	Ile	Ala	Thr	Ile 85	Leu	Gln	Ala	Arg	Asn 90	Ser	Tyr	Lys	Lys	Ala Val 95
Asn	Gln	Lys	Lys 100	Leu	Ser	Glu	Pro	Leu 105	Met	Glu	Arg	Pro	Glu 110	Leu Lys
Ala	Leu	Asp 115	Tyr	Ser	Leu	Asp	Leu 120	Lys	Glu	Val	Trp	Asp 125	Leu	His His
Ser	Val 130	Val	Lys	His	Leu	Lys 135	Lys	Leu	Asp	Leu	Asn 140	Leu	Ser	Lys Thr
Gln 145	Arg	Glu	Val	Leu	Asn 150	Gln	Ile	Lys	Ile	Asp 155	Asp	Glu	Gly	Pro Ser 160
Leu	Gly	Glu	Cys 165	Ala	Ala	Met	Ile	Ser	Glu 170	Asn	Tyr	Asp	Ala Cys 175	Leu
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Gln 195	Glu	Thr	Arg	Phe	Asn	Gln	Asn 200	Leu	Thr	His	Arg	Asn 205	Lys	Val Leu
Leu 210	Ser	Ile	Leu	Ser	Arg	Ile 215	Thr	Asp	Asn	Ile	Ser 220	Lys	Ala	Gly Gly
Val 225	Phe	Ser	Leu	Lys	Phe 230	Ser	Thr	Leu	Ser	Ser 235	Arg	Met	Ser	Arg Ile 240
His	Thr	Thr	Thr 245	Thr	Val	Ile	Leu	Ala	Leu 250	Ser	Ala	Val	Val	Ser Val 255
Met	Val	Val 260	Ala	Ala	Leu	Ile	Pro	Gly 265	Gly	Ile	Leu	Ala 270	Leu	Pro Ile
Leu	Leu	Ala 275	Val	Ala	Ile	Ser	Ala 280	Gly	Val	Ile	Val	Thr 285	Gly	Leu Ser
Tyr	Leu 290	Val	Arg	Gln	Ile 295	Leu	Ser	Asn	Thr	Lys	Arg 300	Asn	Arg	Gln Asp
Phe 305	Tyr	Lys	Asp	Phe 310	Val	Lys	Asn	Val	Asp	Ile 315	Glu	Leu	Leu	Asn Gln 320
Thr	Val	Thr	Leu 325	Gln	Arg	Phe	Leu	Phe	Glu 330	Met	Leu	Lys	Gly 335	Val Leu
Lys	Glu	Glu	Glu 340	Glu	Val	Ser	Leu	Glu 345	Gly	Gln	Asp	Trp	Tyr 350	Thr Gln
Tyr	Ile 355	Thr	Asn	Ala	Pro	Ile	Glu 360	Lys	Arg	Leu	Ile 365	Glu	Glu	Ile Arg
Val	Thr 370	Tyr	Lys	Glu	Ile	Asp 375	Ala	Gln	Thr	Lys	Lys 380	Met	Lys	Thr Asp
Leu 385	Glu	Phe	Leu	Glu	Asn 390	Glu	Val	Arg	Ser	Gly 395	Arg	Leu	Ser	Val Ala 400
Ser	Pro	Ser	Glu 405	Asp	Pro	Ser	Glu	Thr	Pro 410	Ile	Phe	Thr	Gln	Gly Lys 415
Glu	Phe	Ala	Lys 420	Leu	Arg	Arg	Gln	Thr 425	Ser	Gln	Asn	Ile	Ser	Thr Ile 430

Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
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 Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
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 Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Val Glu Gly Val
 465 470 475 480
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 485 490 495
 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
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 <213> Chlamydia pneumoniae

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 35 40 45
 Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met Ala
 50 55 60
 Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys Val
 65 70 75 80
 Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu Gly
 85 90 95
 Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser Leu
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 Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala Thr
 115 120 125
 Ala Met Ser Asp Ala Pro Ser His Pro Gly Ile Trp Ile Gly Gly Ile
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 Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe Arg
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 Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro Gln
 165 170 175
 Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser Lys
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 Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser Leu
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 Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg Arg

210 215 220
 His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro Leu
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 Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met Thr
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 260 265 270
 Ser Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr
 275 280 285
 Arg Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser
 290 295 300
 Val Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe
 305 310 315 320
 Asp Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe
 325 330 335
 Lys His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly
 340 345 350
 Tyr Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu
 355 360 365
 Thr Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln
 370 375 380
 Ala Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu
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 Asp Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser
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<212> DNA

<213> C. Trachomatis D serovar

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<210> 531

<211> 972

<212> DNA

<213> C. Trachomatis D serovar

<400> 531

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<210> 532

<211> 1938

<212> DNA

<213> C. Trachomatis D serovar

<400> 532

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<210> 533

<211> 1242

<212> DNA

<213> C. Trachomatis D serovar

<400> 533

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<210> 534

<211> 1212

<212> DNA

<213> C. Trachomatis D serovar

<400> 534

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<210> 535

<211> 1617

<212> DNA

<213> C. Trachomatis D serovar

<400> 535

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<210> 536

<211> 312

<212> DNA

<213> C. Trachomatis D serovar

<400> 536

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<210> 537

<211> 1008

<212> DNA

<213> C. Trachomatis D serovar

<400> 537

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<210> 538

<211> 1278

<212> DNA

<213> C. Trachomatis D serovar

<400> 538

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<210> 539

<211> 1815

<212> DNA

<213> C. Trachomatis D serovar

<400> 539

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<210> 540

<211> 519

<212> DNA

<213> C. Trachomatis D serovar

<400> 540

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tacaacacag	ctcaagggca	gtattaccaa	atattaaacc	aaagtaattct	caagcgcattg	360
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<210> 541
 <211> 1062
 <212> DNA
 <213> C. Trachomatis D serovar

<400> 541
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<210> 542
 <211> 1263
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 543
 <211> 693
 <212> DNA

<213> C. Trachomatis D serovar

<400> 543

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<210> 544

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

<400> 544

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<210> 545

<211> 1149

<212> DNA

<213> C. Trachomatis D serovar

<400> 545

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<210> 546

<211> 579

<212> DNA

<213> C. Trachomatis D serovar

<400> 546

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<210> 547

<211> 3159

<212> DNA

<213> C. Trachomatis D serovar

<400> 547

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<211> 1038

<212> DNA

<213> C. Trachomatis D serovar

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<210> 549

<211> 978

<212> DNA

<213> C. Trachomatis D serovar

<400> 549

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<210> 550

<211> 438

<212> DNA

<213> C. Trachomatis D serovar

<400> 550

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<210> 551

<211> 1581

<212> DNA

<213> C. Trachomatis D serovar

<400> 551

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<211> 1950

<212> DNA

<213> C. Trachomatis D serovar

<400> 552

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<213> C. Trachomatis D serovar

<400> 553

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ggtecccttct	ggactctcta	cggaaactat	actatcgatg	taggcatgta	tacgctatcg	5220
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<210> 557

<211> 792

<212> DNA

<213> C. Trachomatis D serovar

<400> 557

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acaactgtcg	cagccaaaat	gacagcttct	gatggaatat	ctttaacagt	ctccaataat	180
tcataacca	atgcttctat	tacaattggg	ttggatgcgg	aaaaagctta	ccagcttatt	240

ctagaaaagt tgggaaatca aattcttgat ggaattgctg atactattgt tgatagtaca 300
 gtccaagata ttttagacaa aatcacaca gacccttctc taggtttgtt gaaagctttt 360
 aacaactttc caatcactaa taaaattcaa tgcaacgggt tattcactcc cagtaacatt 420
 gaaactttat taggaggaac tgaaatagga aaattcacag tcacacccaa aagctctggg 480
 agcatgttct tagtctcagc agatattatt gcatcaagaa tggaaggcgg cgttggttcta 540
 gctttggtac gagaagggtga ttctaagccc tgcgcgatta gttatggata ctcatcaggc 600
 gttcctaatt tatgtagtct aagaaccagc attactaata caggattgac accaacaacg 660
 tattcattac gtgtaggcgg tttagaaagc ggtgtggtat ggggttaatgc ctttttcta 720
 ggcaatgata ttttaggaat aacaaatact tctaattgtat cttttttgga agtaatacct 780
 caaacaacg ct 792

<210> 558

<211> 306

<212> DNA

<213> C. Trachomatis D serovar

<400> 558

atgcaaaata aaagaaaagt gagggacgat tttattaaaa ttgttaaaga tgtgaaaaaa 60
 gatttccccg aattagacct aaaaatacga gtaaacagg aaaaagtaac tttcttaaat 120
 tctcccttag aactctacca taaaagtgtc tcactaatc taggactgct tcaacaaata 180
 gaaaactcct taggattatt cccagactct cctgttcttg aaaaattaga ggataacagt 240
 ttaaagctaa aaaaggcttt gattatgctt atcttgtcta gaaaagacat gttttccaag 300
 gctgaa 306

<210> 559

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

<400> 559

gtgggatgca acttggccca attttttaggg aaaaaagtgt tacttgctga cctagaccog 60
 caatccaatt tatcttctgg attgggggct agtgtcagaa ataaccacaaa aggcttgcac 120
 gacatagtat acaaatcaaa cgatttataaa tcaatcattt gcgaaacaaa aaaagatagt 180
 gtggacctaa ttcttgcac attttttatcc gaacagttaa gagaattgga tattcataga 240
 ggacctagta acaacttaaa gttatttctg aatgagtact gcgctccttt ttatgacatc 300
 tgcataatag acactccacc tagcctagga ggggttaacga aagaagcttt tgttgtagga 360
 gacaaattaa ttgcttggtt aactccagaa cttttttcta ttctaggggtt acaaaagata 420
 cgtgaattct taagttcggg cggaaaacct gaagaagaac acattcttgg aatagctttg 480
 tctttttggg atgatcgtaa ctogactaac caaatgtata tagacattat cgagtctatt 540
 tacaaaaaca agcttttttc aacaaaaatt cgctcgagata tttctctcag ccgttctctt 600
 cttaaagaag attctgtagc taatgtctat ccaaattcta gggccgcaga agatattctg 660
 aagttaacgc atgaaatagc aaatatattg catatcgaat atgaacgaga ttactctcag 720
 aggacaacg 729

<210> 560

<211> 289

<212> PRT

<213> C. Trachomatis D serovar

<400> 560

Met Thr His Gln His Lys Lys Ile Ser Glu Glu Thr Ile Ala Cys Asp
 1 5 10 15
 Met Leu Glu Arg Tyr Thr Gly Ser Thr Val Gln Glu Phe Gln Pro Tyr
 20 25 30
 Leu Leu Leu Thr Asn Phe Ala Tyr Val Asp Val Phe Ala Glu Ile
 35 40 45
 Tyr Gln Val Pro Val Ser Arg Gly Ser Met Phe Ser Ala Ala His Ala

50 55 60
 Pro Gln Ile His Thr Ser Ile Ile Asp Phe Lys Leu Gly Ser Pro Gly
 65 70 75 80
 Ala Ala Leu Thr Val Asp Leu Cys Ser Phe Leu Pro Asn Ala Thr Ala
 85 90 95
 Ala Ile Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Ile
 100 105 110
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Lys Asp Gly Thr Ser
 115 120 125
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 130 135 140
 Gln Lys Met Ile Thr Asn Ile Leu Glu Ala Lys Asn Leu Pro Tyr His
 145 150 155 160
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 165 170 175
 Glu Phe Arg Arg Lys Leu Tyr Glu Asn Lys Ala Gln Thr Val Glu Met
 180 185 190
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Leu
 195 200 205
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Asp Gly Ile
 210 215 220
 Lys Thr Lys Glu Ser Ser Ala Val Leu Asn Ser His Thr Lys Glu
 225 230 235 240
 His Ile Leu Thr Gly Val Glu Val Phe Ala Ser Leu Gln Glu Lys Ser
 245 250 255
 Gly Pro Gly Ile Lys Lys Thr Lys Gly Leu Pro His Met Glu Phe Gly
 260 265 270
 Gln Ala Asp Asp Ser Leu Ser Glu Gln Thr Glu Val Ser Gly Gly Asp
 275 280 285
 Phe

<210> 561

<211> 394

<212> PRT

<213> C. Trachomatis D serovar

<400> 561

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu

145 150 155 160
 Cys Gly Ala Asp Tyr Glu Ala Arg Asp Leu Lys Glu Pro Arg Ser Lys
 165 170 175
 Leu Thr Gly Ala Ala Leu Ser Leu Arg Asp Thr Glu His Ala Tyr Leu
 180 185 190
 His Leu Glu Arg Met Lys Glu Asp Leu Leu Ala Phe Val Gln Gly Ile
 195 200 205
 Tyr Leu Arg Pro His Met Arg Asn Phe Val Thr Asp Tyr Ile Glu His
 210 215 220
 Leu Arg Pro Arg Ala Val Thr Arg Asp Leu Ser Trp Gly Ile Pro Val
 225 230 235 240
 Pro Asp Leu Glu Asn Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile
 245 250 255
 Gly Tyr Ile Ser Gly Thr Met Asp Trp Ala Ala Ser Ile Gly Asp Pro
 260 265 270
 Glu Ala Trp Lys Lys Phe Trp Leu Asp Asp Thr Val Thr Tyr Ala Gln
 275 280 285
 Phe Ile Gly Lys Asp Asn Thr Ser Phe His Ala Ala Ile Phe Pro Ala
 290 295 300
 Met Glu Ile Gly Gln Ser Leu Pro Tyr Lys Lys Val Asp Ala Leu Val
 305 310 315 320
 Thr Ser Glu Phe Leu Leu Glu Gly Phe Gln Phe Ser Lys Ser Asp
 325 330 335
 Gly Asn Phe Ile Asp Met Asp Ala Phe Leu Glu Thr Tyr Ser Leu Asp
 340 345 350
 Lys Leu Arg Tyr Val Leu Ala Ala Ile Ala Pro Glu Thr Ser Asp Ser
 355 360 365
 Glu Phe Ser Phe Gln Glu Phe Lys Thr Arg Cys Asn Ser Glu Leu Val
 370 375 380
 Gly Lys Tyr Gly Asn Phe Val Asn Arg Val Leu Ala Phe Ala Val Lys
 385 390 395 400
 Asn Gly Cys Thr Glu Leu Ser Ser Pro Gln Leu Glu Gln Lys Asp Leu
 405 410 415
 Asp Phe Ile Ser Lys Ser Gln Lys Leu Ala Lys Asp Ala Ala Glu His
 420 425 430
 Tyr Ala Gln Tyr Ser Leu Arg Lys Ala Cys Ser Thr Ile Met Glu Leu
 435 440 445
 Ala Ala Leu Gly Asn Gly Tyr Phe Asn Asp Glu Ala Pro Trp Lys Leu
 450 455 460
 Ala Lys Glu Gly Asn Trp Asn Arg Val Arg Ala Ile Leu Phe Cys Ala
 465 470 475 480
 Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Met Pro
 485 490 495
 Glu Thr Ala Leu Lys Ile Leu Glu Met Ile Ala Pro His Ser Leu Asp
 500 505 510
 Leu Gly Ser Gln Asp Pro Asp Arg Leu Gln Ser Leu Trp Thr Asp Ser
 515 520 525
 Phe Phe Asp Tyr Ser Glu Glu Lys Phe Ser Leu Lys Glu Pro Glu Leu
 530 535 540
 Leu Phe Thr Met Val Glu
 545 550

<210> 563

<211> 100

<212> PRT

<213> C. Trachomatis D serovar

<400> 563

Met Ala Arg Lys Asp Arg Leu Thr Asn Glu Arg Leu Asn Lys Leu Phe
 1 5 10 15
 Asp Ser Pro Phe Ser Leu Val Asn Tyr Val Ile Lys Gln Ala Lys Asn
 20 25 30
 Lys Ile Ala Arg Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Ala
 35 40 45
 Leu Asn Phe Leu Asp Leu Tyr Gly Ile Gln Ser Glu Tyr Ala Glu Arg
 50 55 60
 Asp Asp Arg Glu Arg His Leu Ser Ala Thr Gly Glu Arg Arg Arg Glu
 65 70 75 80
 Gln Gly Phe Gly Thr Ser Arg Arg Lys Asp Pro Ser Leu Tyr Asn Trp
 85 90 95
 Ser Asp Val Lys
 100

<210> 564

<211> 205

<212> PRT

<213> C. Trachomatis D serovar

<400> 564

Met Ser Val Lys Val Ile Ser Pro Phe Ser Gln Asp Gly Val Gln Cys
 1 5 10 15
 Phe Pro Lys Leu Phe Ile Ile Ser Ala Pro Ala Gly Ala Gly Lys Thr
 20 25 30
 Thr Leu Thr His Met Leu Gln Arg Glu Phe Pro Asp Ala Phe Glu Lys
 35 40 45
 Thr Val Ser Ser Thr Thr Arg Ser Ala Arg Pro Gly Glu Val His Gly
 50 55 60
 Val Asp Tyr Leu Phe Val Ser Glu Asp Asp Phe Lys Gln Ser Leu Asp
 65 70 75 80
 Arg Glu Asp Phe Leu Glu Trp Val Phe Leu Phe Gly Thr Tyr Tyr Gly
 85 90 95
 Thr Ser Lys Ala Glu Ile Ser Arg Val Leu Gln Lys Gly Lys His Cys
 100 105 110
 Ile Ala Val Ile Asp Val Gln Gly Ala Leu Ala Leu Lys Lys Gln Met
 115 120 125
 Pro Ala Val Thr Ile Phe Ile Gln Ala Pro Ser Gln Glu Glu Leu Glu
 130 135 140
 Arg Arg Leu Asn Ala Arg Asp Ser Glu Lys Asp Phe Gln Lys Lys Glu
 145 150 155 160
 Arg Leu Glu His Ser Ala Val Glu Ile Ala Ala Ala Ser Glu Phe Asp
 165 170 175
 Tyr Val Val Val Asn Asp Asp Leu Ile Thr Ala Tyr Gln Val Leu Arg
 180 185 190
 Ser Ile Phe Ile Ala Glu Glu His Arg Met Ser His Gly
 195 200 205

<210> 565

<211> 602

<212> PRT

<213> C. Trachomatis D serovar

<400> 565

Met Lys Pro Tyr Lys Ile Glu Asn Ile Arg Asn Phe Ser Ile Ile Ala
 1 5 10 15

His	Ile	Asp	His	Gly	Lys	Ser	Thr	Ile	Ala	Asp	Arg	Leu	Leu	Glu	Ser
Thr	Ser	Thr	Ile	Glu	Gln	Arg	Glu	Met	Arg	Glu	Gln	Leu	Leu	Asp	Ser
Met	Asp	Leu	Glu	Arg	Glu	Arg	Gly	Ile	Thr	Ile	Lys	Ala	His	Pro	Val
Thr	Met	Thr	Tyr	Glu	Tyr	Glu	Gly	Glu	Thr	Tyr	Glu	Leu	Asn	Leu	Ile
Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Leu
Ala	Ala	Cys	Glu	Gly	Ala	Leu	Leu	Ile	Val	Asp	Ala	Ala	Gln	Gly	Val
Gln	Ala	Gln	Ser	Leu	Ala	Asn	Val	Tyr	Leu	Ala	Leu	Glu	Arg	Asp	Leu
Glu	Ile	Ile	Pro	Val	Leu	Asn	Lys	Ile	Asp	Leu	Pro	Ala	Ala	Gln	Pro
Glu	Ala	Ile	Lys	Lys	Gln	Ile	Glu	Glu	Phe	Ile	Gly	Leu	Asp	Thr	Ser
Asn	Thr	Ile	Ala	Cys	Ser	Ala	Lys	Thr	Gly	Gln	Gly	Ile	Pro	Glu	Ile
Leu	Glu	Ser	Ile	Ile	Arg	Leu	Val	Pro	Pro	Pro	Lys	Pro	Pro	Gln	Glu
Thr	Glu	Leu	Lys	Ala	Leu	Ile	Phe	Asp	Ser	His	Tyr	Asp	Pro	Tyr	Val
Gly	Ile	Met	Val	Tyr	Val	Arg	Val	Ile	Ser	Gly	Glu	Ile	Lys	Lys	Gly
Asp	Arg	Ile	Thr	Phe	Met	Ala	Thr	Lys	Gly	Ser	Ser	Phe	Glu	Val	Leu
Gly	Ile	Gly	Ala	Phe	Leu	Pro	Glu	Ala	Thr	Leu	Met	Glu	Gly	Ser	Leu
Arg	Ala	Gly	Gln	Val	Gly	Tyr	Phe	Ile	Ala	Asn	Leu	Lys	Lys	Val	Lys
Asp	Val	Lys	Ile	Gly	Asp	Thr	Val	Thr	Thr	Val	Lys	His	Pro	Ala	Lys
Glu	Pro	Leu	Glu	Gly	Phe	Lys	Glu	Ile	Lys	Pro	Val	Val	Phe	Ala	Gly
Ile	Tyr	Pro	Ile	Asp	Ser	Ser	Asp	Phe	Asp	Thr	Leu	Lys	Asp	Ala	Leu
Gly	Arg	Leu	Gln	Leu	Asn	Asp	Ser	Ala	Leu	Thr	Ile	Glu	Gln	Glu	Asn
Ser	His	Ser	Leu	Gly	Phe	Gly	Phe	Arg	Cys	Gly	Phe	Leu	Gly	Leu	Leu
His	Leu	Glu	Ile	Ile	Phe	Glu	Arg	Ile	Ser	Arg	Glu	Phe	Asp	Leu	Asp
Ile	Ile	Ala	Thr	Ala	Pro	Ser	Val	Ile	Tyr	Lys	Val	Val	Leu	Lys	Asn
Gly	Lys	Thr	Leu	Phe	Ile	Asp	Asn	Pro	Thr	Ala	Tyr	Pro	Asp	Pro	Ala
Leu	Ile	Glu	His	Met	Glu	Glu	Pro	Trp	Val	His	Val	Asn	Ile	Ile	Thr
Pro	Gln	Glu	Tyr	Leu	Ser	Asn	Ile	Met	Ser	Leu	Cys	Met	Asp	Lys	Arg
Gly	Ile	Cys	Leu	Lys	Thr	Asp	Met	Leu	Asp	Gln	His	Arg	Leu	Val	Leu
Ser	Tyr	Glu	Leu	Pro	Leu	Asn	Glu	Ile	Val	Ser	Asp	Phe	Asn	Asp	Lys
Leu	Lys	Ser	Val	Thr	Lys	Gly	Tyr	Gly	Ser	Phe	Asp	Tyr	Arg	Leu	Gly

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<210> 566
<211> 324
<212> PRT
<213> C. Trachomatis D serovar
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<400> 566															
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Ile	Ala	Glu	Phe 20	Lys	Glu	Lys	Asn 25	Lys	Glu	Asn	Ser	Leu 30	Leu	Ser	Ser
Ser	Glu	Ile 35	Gln	Lys	Leu	Asp 40	Lys	Arg	Leu	Asp	Arg	Leu 45	Lys	Glu	Lys
Ile 50	Tyr	Ser	Asp	Leu	Thr 55	Pro	Trp	Glu	Arg	Val	Gln 60	Ile	Cys	Arg	His
Pro 65	Ser	Arg	Pro	Arg	Thr 70	Val	Asn	Tyr	Ile	Glu 75	Gly	Met	Cys	Glu	Glu 80
Phe	Val	Glu	Leu 85	Cys	Gly	Asp	Arg	Thr	Phe 90	Arg	Asp	Asp	Pro	Ala 95	Val
Val	Gly	Gly	Phe 100	Ala	Lys	Ile	Gln 105	Gly	Gln	Arg	Phe	Met	Leu 110	Ile	Gly
Gln	Glu	Lys 115	Gly	Cys	Asp	Thr	Lys 120	Ser	Arg	Met	His	Arg 125	Asn	Phe	Gly
Met 130	Leu	Cys	Pro	Glu	Gly	Phe 135	Arg	Lys	Ala	Leu 140	Arg	Leu	Ala	Lys	Met
Ala 145	Glu	Lys	Phe 150	Gly	Leu	Pro	Ile	Ile	Phe 155	Leu	Val	Asp	Thr	Pro	Gly 160
Ala	Phe	Pro	Gly 165	Leu	Thr	Ala	Glu	Glu	Arg 170	Gly	Gln	Gly	Trp	Ala 175	Ile
Ala	Thr	Asn 180	Leu	Phe	Glu	Leu	Ala 185	Arg	Leu	Ala	Thr	Pro	Ile 190	Ile	Val
Ile	Val 195	Ile	Gly	Glu	Gly	Cys 200	Ser	Gly	Gly	Ala	Leu 205	Gly	Met	Ala	Ile
Gly 210	Asp	Val	Val	Ala	Met 215	Leu	Glu	His	Ser	Tyr	Tyr 220	Ser	Val	Ile	Ser
Pro 225	Glu	Gly	Cys	Ala 230	Ser	Ile	Leu	Trp	Lys	Asp 235	Pro	Lys	Lys	Asn	Ser 240
Asp	Ala	Ala	Ala 245	Met	Leu	Lys	Met	His	Gly 250	Glu	Asp	Leu	Lys	Gly 255	Phe
Ala	Ile	Val	Asp	Ala	Val	Ile	Lys	Glu	Pro	Ile	Gly	Gly	Ala	His	His

Asn	Pro	Ala	Ala	Thr	Tyr	Arg	Ser	Val	Gln	Glu	Tyr	Val	Leu	Gln	Glu
		275					280					285			
Trp	Leu	Lys	Leu	Lys	Asp	Leu	Pro	Val	Glu	Glu	Leu	Leu	Glu	Lys	Arg
	290				295						300				
Tyr	Gln	Lys	Phe	Arg	Thr	Ile	Gly	Leu	Tyr	Glu	Thr	Ser	Ser	Glu	Ser
305					310					315					320
Asp	Ser	Glu	Ala												

<210> 567

<211> 646

<212> PRT

<213> C. Trachomatis D serovar

<400> 567

Met	Lys	Leu	Leu	Leu	Lys	Ala	Ile	Leu	Arg	His	Lys	Lys	His	Leu	Val
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Leu	Phe	Gly	Phe	Ser	Leu	Leu	Ser	Ile	Leu	Gly	Leu	Thr	Ile	Thr	Ser
		20						25					30		
Gln	Ala	Glu	Ile	Phe	Ser	Leu	Gly	Leu	Ile	Ala	Lys	Thr	Gly	Pro	Asp
	35						40					45			
Thr	Phe	Leu	Leu	Phe	Gly	Lys	Gln	Glu	Gly	Ala	Ser	Leu	Val	Lys	Arg
	50				55						60				
Lys	Glu	Leu	Ser	Lys	Asp	Gln	Leu	Leu	Glu	Gln	Trp	Asp	Asn	Ile	Val
65				70					75					80	
Gly	Glu	Gly	Asp	Thr	Leu	Ser	Leu	Pro	Gln	Ala	Asn	Ala	Tyr	Ile	Ala
				85				90						95	
Lys	His	Ser	Gly	Gly	Ser	Gln	Ser	Ile	Thr	Lys	Arg	Leu	Ser	Ala	Tyr
			100					105					110		
Leu	Ser	Gly	Cys	Phe	Asp	Phe	Ser	Arg	Leu	Gln	Cys	Leu	Ala	Leu	Phe
		115					120					125			
Leu	Val	Val	Val	Ala	Ile	Leu	Lys	Ser	Thr	Thr	Leu	Phe	Phe	Gln	Arg
	130					135					140				
Phe	Leu	Ala	Gln	Leu	Ile	Ala	Ile	Arg	Val	Ser	Cys	Ser	Leu	Arg	Lys
145				150					155					160	
Asp	Tyr	Phe	Leu	Ala	Leu	Gln	Thr	Leu	Pro	Met	Thr	Phe	Phe	His	Ala
			165					170						175	
His	Asp	Met	Gly	Asn	Leu	Ser	Ser	Arg	Val	Ile	Ala	Asp	Ser	Ser	Met
		180						185					190		
Ile	Ala	Leu	Ala	Ile	Asn	Ala	Leu	Met	Val	Asn	Tyr	Ile	Gln	Ala	Pro
	195						200					205			
Ile	Thr	Met	Thr	Leu	Ala	Leu	Val	Val	Cys	Leu	Ser	Ile	Ser	Trp	Lys
	210					215					220				
Phe	Cys	Ala	Cys	Val	Cys	Leu	Ala	Phe	Pro	Ile	Phe	Ile	Leu	Pro	Ile
225				230					235					240	
Val	Ile	Ile	Ala	Lys	Lys	Val	Lys	Ala	Leu	Ala	Lys	Arg	Ile	Gln	Lys
			245					250					255		
Ser	Gln	Asp	His	Ser	Ala	Ala	Ala	Leu	Leu	Asp	Phe	Leu	Leu	Gly	Ile
		260						265					270		
Leu	Thr	Val	Lys	Val	Phe	Arg	Thr	Glu	Gln	Phe	Ser	Phe	Ser	Lys	Tyr
	275						280					285			
Cys	Gln	Lys	Asn	Asp	Glu	Ile	Ala	Arg	Leu	Glu	Glu	Arg	Ser	Ala	Ala
	290				295						300				
Tyr	Ser	Leu	Ile	Pro	Arg	Pro	Leu	Leu	His	Thr	Ile	Ala	Ser	Leu	Phe
305				310						315					320
Phe	Ala	Leu	Val	Ile	Met	Ile	Gly	Leu	Tyr	His	Phe	His	Ile	Pro	Pro

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325 330 335
 Glu Glu Leu Val Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr Asp Pro
 340 345 350
 Ile Lys Lys Phe Ala Asp Glu Asn Ala Asn Ile Met Trp Gly Cys Ala
 355 360 365
 Ala Ala Glu Arg Phe Tyr Glu Val Leu Asp Leu Ala Lys Gln Gln Ser
 370 375 380
 Asn Val Ser Glu Lys Leu Asn Glu Phe Gln Gly Leu Gln His Ser Ile
 385 390 395 400
 Gln Phe Cys Asn Val Ser Phe Gly Tyr Val Glu Asp Ser Pro Val Leu
 405 410 415
 Ser Asp Phe Asn Leu Val Leu Lys Lys Gly Glu Ala Ile Gly Ile Val
 420 425 430
 Gly Pro Thr Gly Ser Gly Lys Ser Thr Ile Ala Lys Leu Leu Pro Arg
 435 440 445
 Leu Tyr Glu Val Ser His Gly Glu Leu Leu Ile Asp Ser Leu Pro Ile
 450 455 460
 Arg Ser Tyr Cys Lys Asn Ser Leu Arg Lys His Ile Gly Cys Val Leu
 465 470 475 480
 Gln His Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys
 485 490 495
 Gly Arg Thr Phe Ser Glu Glu Glu Val Phe His Ala Leu Lys Gln Ala
 500 505 510
 His Ala Tyr Glu Phe Val Ser Lys Met Pro Gln Gly Val His Ser Leu
 515 520 525
 Leu Glu Glu Ser Ser Lys Asn Leu Ser Gly Gly Gln Gln Gln Arg Leu
 530 535 540
 Thr Ile Ala Arg Ala Leu Leu His Asn Thr Ser Ile Leu Leu Leu Asp
 545 550 555 560
 Glu Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Val Lys Glu
 565 570 575
 Ile Val Gly Gln Leu Lys Gly Arg Cys Thr Gln Ile Ile Ile Ala His
 580 585 590
 Lys Leu Ser Thr Leu Glu Tyr Val Asp Arg Ile Val Tyr Leu Glu Gln
 595 600 605
 Gly Lys Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Asp Ser Cys
 610 615 620
 Pro Ala Phe Gln Arg Met Trp Val Leu Ser Gly Ala Lys Asp Trp Glu
 625 630 635 640
 Leu Asn Ala Val Val Lys
 645

<210> 568

<211> 414

<212> PRT

<213> C. Trachomatis D serovar

<400> 568

Met Phe Ser Ser Ala Ile Val Ile Leu Thr Ala Ile Phe Val Leu Cys
 1 5 10 15
 Ser Gly Phe Val Ser Leu Ser His Ile Ala Leu Phe Ser Leu Pro Ser
 20 25 30
 Ser Leu Ile Ala His Tyr Ser His Ser Lys Asn Arg Gln Leu Arg Gln
 35 40 45
 Ile Ala Asn Leu Met Ala Tyr Pro Asn His Leu Leu Met Thr Leu Val
 50 55 60
 Phe Phe Asp Ile Gly Ile Asn Ile Gly Val Gln Asn Cys Ile Ala Thr

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<210> 569
<211> 404
<212> PRT
<213> C. Trachomatis D serovar
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<400> 569																
Met	Glu	Thr	Asn	Ser	Pro	Phe	Phe	Trp	Leu	Gly	Val	Asn	Leu	Leu	Cys	
1				5					10					15		
Ile	Phe	Val	Gln	Gly	Phe	Phe	Ser	Met	Met	Glu	Met	Ala	Cys	Ile	Ser	
			20					25					30			
Phe	Asn	Arg	Val	Arg	Leu	Gln	Tyr	Tyr	Leu	Thr	Lys	Ser	Asn	Lys	Lys	
		35					40					45				
Ala	Ser	Tyr	Ile	Asn	Phe	Leu	Val	Arg	Arg	Pro	Tyr	Arg	Leu	Phe	Gly	

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<210> 570
<211> 539
<212> PRT
<213> C. Trachomatis D serovar
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<400> 570															
Met	Cys	Cys	Val	Asp	Gly	Ser	Asn	Ser	Ile	Gln	Gln	Arg	Met	Arg	Phe
1				5					10					15	
Cys	Glu	Tyr	Arg	Thr	Ala	Ala	Gln	Glu	Ala	Lys	Thr	Ser	Leu	Ser	Ser
			20					25					30		
Asp	Cys	Ser	Leu	Leu	Glu	Ala	Arg	Leu	Ala	Leu	Arg	Ala	Leu	Ala	Lys

Leu Thr Ile Leu Glu Ala Ile Ala Tyr Ser Glu Asn Arg Ile Ala Thr
 500 505 510
 Cys Phe Leu Arg Glu Arg Cys Leu Gln Glu Ala Ala Ser Leu Gln Ser
 515 520 525
 Ala Ala Ala Gly Ala Val Phe Ala Leu Phe Lys
 530 535

<210> 571
 <211> 104
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 571
 Met Gln Thr Ser Arg Ile Ser Ser Phe Phe Arg Gly Leu Val His Leu
 1 5 10 15
 Tyr Arg Trp Ala Ile Ser Pro Phe Leu Gly Ala Pro Cys Arg Phe Phe
 20 25 30
 Pro Thr Cys Ser Glu Tyr Ala Leu Val Ala Leu Lys Lys His Pro Leu
 35 40 45
 Arg Lys Ser Leu Phe Leu Ile Ala Lys Arg Leu Leu Lys Cys Gly Pro
 50 55 60
 Trp Cys Ile Gly Gly Ile Asp Leu Val Pro Arg Thr Ser Val Glu Glu
 65 70 75 80
 Tyr Leu Ser Ser Pro Thr Pro Leu Ala Glu Ser Pro Asp Asp Arg Thr
 85 90 95
 Val Pro His Thr Gln Glu Thr Ser
 100

<210> 572
 <211> 336
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 572
 Met Gln Leu Phe Phe Gly Arg Phe Tyr Glu Val Ala Cys Ile Val Ala
 1 5 10 15
 Ser Ile Leu Arg Glu Arg Asp Val Gly Val Phe Met Gly Ile Glu Gly
 20 25 30
 Arg Gly Ser Gly Ala Met Gln Ser Lys Lys Thr Ile Lys Trp Leu Lys
 35 40 45
 Gln Ala Leu Val Leu Ser Ser Ile Val Asn Ile Leu Leu Leu Leu Leu
 50 55 60
 Ile Tyr Ser Thr Val Phe Arg Lys Asp Ile Tyr Lys Leu Arg Val Phe
 65 70 75 80
 Pro Gly Asn Leu Ile Ala Lys Ser Ser Arg Ile Gly Lys Ile Pro Glu
 85 90 95
 Asp Ile Leu Glu Arg Leu Glu Asn Ala Ser Phe Ala Asp Leu Leu Ala
 100 105 110
 Leu Leu Gln Glu Glu Arg Met Val Phe Gly His Pro Leu Lys Ser Trp
 115 120 125
 Ala Leu Gly Val Ser Ile Gln Lys Tyr Phe Val Asp Ile Ala Pro Met
 130 135 140
 Leu Thr His Pro Leu Thr Phe Ile Arg Leu Lys Ser Pro Glu Arg Thr
 145 150 155 160
 Trp Leu Leu Pro Asp Ile Asn Asp Gln Glu Phe Thr Arg Ile Cys Gln
 165 170 175
 Tyr Leu Leu Thr Glu Arg Phe Pro Phe Ser Ser Arg Gly Phe Phe Arg

Ile	Met	Val	Arg	Asp	Cys	Glu	Ala	Gly	Met	Val	Asp	Glu	Asp	Val	Leu
	195						200					205			
Tyr	Arg	Phe	Cys	His	Leu	Pro	Glu	Phe	Leu	Tyr	Val	Arg	Ser	Leu	Leu
	210					215					220				
Phe	Gly	Ala	Glu	Ile	Glu	Ala	Ala	Ser	Val	Ala	Ser	Leu	Ala	Arg	Met
225					230					235					240
Ile	Ile	Gln	Gly	Gly	Glu	Asp	Leu	Phe	Phe	Ser	Leu	Cys	Cys	Leu	Glu
			245						250					255	
Asn	Arg	Gln	Thr	Ala	Ile	Ser	Asp	His	Gln	Arg	Arg	Cys	Phe	Leu	Lys
		260						265					270		
Ala	Tyr	Val	Asp	Arg	Gln	Glu	Pro	Leu	Ala	Ala	Leu	Leu	Leu	Leu	Val
	275						280					285			
His	Asp	Ala	Asp	Trp	Val	Leu	His	Glu	Phe	Ser	Asp	Ser	Asp	Leu	Gln
	290					295					300				
Ser	Phe	Ile	Gln	Leu	Leu	Pro	Arg	Glu	Ala	His	Tyr	Thr	Lys	Lys	Phe
305					310					315					320
Leu	Gly	Cys	Val	Ala	Gln	Ser	Cys	Arg	Leu	Gly	Ile	Leu	Leu	Glu	Gly
				325					330					335	

<210> 573

<211> 426

<212> PRT

<213> C. Trachomatis D serovar

<400> 573

Met	Tyr	Val	Arg	Ser	Ile	Phe	Phe	Ser	Ile	Ile	Ala	Phe	Leu	Thr	Val
1				5					10					15	
Gly	Cys	Ser	Phe	Ser	Pro	Pro	Glu	Ser	Gly	Leu	Ile	Ile	Ala	Ile	His
			20					25					30		
Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala	Phe	His
		35					40					45			
Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu	Glu	Leu
	50					55					60				
Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser	Glu	Asp
65					70					75					80
Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp	Ser	Asp
				85					90					95	
Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu	His	Thr
		100						105					110		
Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser	Phe	Arg
		115					120					125			
Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro	Glu	Pro
	130					135					140				
Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr	Arg	Pro
145					150					155					160
Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr	Tyr	Val
				165					170					175	
Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr	Asp	His
			180					185					190		
Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro	Asn	Ile
	195						200					205			
Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp	Val	Gly
	210					215					220				
Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr	Ser	Ala
225					230					235					240
Leu	Tyr	Thr	His	Tyr	Ser	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile	Leu	Asn

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210	215	220
Leu Gly Val Asn Ile	Leu Ala Ala Leu Phe Leu Gly Arg Ala Thr His	
225	230	235
Val Gly Asp Leu Trp	Leu Thr Val Leu Gly Asp Ala Leu Val Ser Gln	240
	245	250
Ile Pro Ala Leu Leu Thr Ser Cys	Ala Ala Ala Thr Leu Ile Ala Lys	255
	260	265
Val Gly Glu Lys Glu Ser Leu Ala	Gln His Leu Leu Asp Tyr Tyr Glu	270
	275	280
Gln Ser Arg Gln Ser Phe Leu Phe Ile Ala Leu Ile Leu Cys Gly Met		285
	290	295
Ala Cys Ile Pro Gly Ala Pro Lys Ala Leu Ile Leu Gly Phe Ser Val		300
305	310	315
Leu Leu Phe Leu Gly Tyr Lys Asn Pro Ser Ser Gly Glu Thr Leu Leu		320
	325	330
Phe Gln Lys Glu Arg Val Glu Phe Val Leu Pro Asp Glu Gly Val Gly		335
	340	345
Asn Pro Ala Asn Leu Tyr Lys Asp Ala Arg Asn Gln Ile Tyr Gln Glu		350
	355	360
Leu Gly Val Val Phe Pro Glu Ala Ile Val Val Arg His Val Thr Gly		365
	370	375
Ser Ser Pro Arg Leu Ile Phe Ser Gly Gln Glu Val Ala Leu Arg Glu		380
385	390	395
Leu Ser Cys Pro Ala Ile Leu Glu Ser Ile Arg Gln Leu Ala Pro Glu		400
	405	410
Thr Ile Ser Glu Arg Phe Val Thr Arg Leu Val Asp Glu Phe Arg Glu		415
	420	425
His Ala Phe Leu Ser Ile Glu Glu Ile Leu Pro Leu Lys Ile Ser Glu		430
	435	440
Asn Ser Leu Ile Phe Leu Leu Arg Ala Leu Val Arg Glu Arg Val Ser		445
	450	455
Leu His Leu Phe Pro Lys Ile Leu Glu Ala Ile Asp Val Tyr Gly Ser		460
465	470	475
Gln Pro Lys Asn Ser Gln Glu Leu Val Glu Cys Val Arg Lys Tyr Leu		480
	485	490
Gly Lys Gln Ile Gly Leu Ser Leu Trp Asn Arg Gln Asp Val Leu Glu		495
	500	505
Val Ile Thr Ile Asp Ser Leu Val Glu Gln Phe Val Arg Asp Ser Gln		510
	515	520
Glu Lys Val Val Leu Asp Leu Asn Glu Lys Val Val Ala Gln Val Lys		525
	530	535
His Leu Leu Arg Val Gly Glu Gly Asn Phe Arg Ala Ile Val Thr Gly		540
545	550	555
Ser Glu Thr Arg Lys Glu Leu Lys Arg Ile Val Asp Pro Tyr Phe Pro		560
	565	570
Asp Leu Leu Val Leu Ala His Ser Glu Leu Pro Glu Glu Ile Pro Ile		575
	580	585
Thr Leu Leu Gly Ala Val Ser Asp Glu Val Leu Leu Ser		590
	595	600
		605

<210> 575

<211> 173

<212> PRT

<213> C. Trachomatis D serovar

<400> 575

Met Lys Lys Phe Leu Leu Leu Ser Leu Met Ser Leu Ser Ser Leu Pro

1 5 10 15
 Thr Phe Ala Ala Asn Ser Thr Gly Thr Ile Gly Ile Val Asn Leu Arg
 20 25 30
 Arg Cys Leu Glu Glu Ser Ala Leu Gly Lys Lys Glu Ser Ala Glu Phe
 35 40 45
 Glu Lys Met Lys Asn Gln Phe Ser Asn Ser Met Gly Lys Met Glu Glu
 50 55 60
 Glu Leu Ser Ser Ile Tyr Ser Lys Leu Gln Asp Asp Asp Tyr Met Glu
 65 70 75 80
 Gly Leu Ser Glu Thr Ala Ala Ala Glu Leu Arg Lys Lys Phe Glu Asp
 85 90 95
 Leu Ser Ala Glu Tyr Asn Thr Ala Gln Gly Gln Tyr Tyr Gln Ile Leu
 100 105 110
 Asn Gln Ser Asn Leu Lys Arg Met Gln Lys Ile Met Glu Glu Val Lys
 115 120 125
 Lys Ala Ser Glu Thr Val Arg Ile Gln Glu Gly Leu Ser Val Leu Leu
 130 135 140
 Asn Glu Asp Ile Val Leu Ser Ile Asp Ser Ser Ala Asp Lys Thr Asp
 145 150 155 160
 Ala Val Ile Lys Val Leu Asp Asp Ser Phe Gln Asn Asn
 165 170

<210> 576

<211> 354

<212> PRT

<213> C. Trachomatis D serovar

<400> 576

Met Ser Gln Ser Thr Tyr Ser Leu Glu Gln Leu Ala Asp Phe Leu Lys
 1 5 10 15
 Val Glu Phe Gln Gly Asn Gly Ala Thr Leu Leu Ser Gly Val Glu Glu
 20 25 30
 Ile Glu Glu Ala Lys Thr Ala His Ile Thr Phe Leu Asp Asn Glu Lys
 35 40 45
 Tyr Ala Lys His Leu Lys Ser Ser Glu Ala Gly Ala Ile Ile Ile Ser
 50 55 60
 Arg Thr Gln Phe Gln Lys Tyr Arg Asp Leu Asn Lys Asn Phe Leu Ile
 65 70 75 80
 Thr Ser Glu Ser Pro Ser Leu Val Phe Gln Lys Cys Leu Glu Leu Phe
 85 90 95
 Ile Thr Pro Val Asp Ser Gly Phe Pro Gly Ile His Pro Thr Ala Val
 100 105 110
 Ile His Pro Thr Ala Ile Ile Glu Asp His Val Cys Ile Glu Pro Tyr
 115 120 125
 Ala Val Val Cys Gln His Ala His Val Gly Ser Ala Cys His Ile Gly
 130 135 140
 Ser Gly Ser Val Ile Gly Ala Tyr Ser Thr Val Gly Glu His Ser Tyr
 145 150 155 160
 Ile His Pro Arg Val Val Ile Arg Glu Arg Val Ser Ile Gly Lys Arg
 165 170 175
 Val Ile Ile Gln Pro Gly Ala Val Ile Gly Ser Cys Gly Phe Gly Tyr
 180 185 190
 Val Thr Ser Ala Phe Gly Gln His Lys His Leu Lys His Leu Gly Lys
 195 200 205
 Val Ile Ile Glu Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile Asp
 210 215 220
 Arg Gly Arg Phe Lys His Ser Val Val Arg Glu Gly Ser Lys Ile Asp

225 230 235 240
 Asn Leu Val Gln Ile Ala His Gln Val Glu Val Gly Gln His Ser Met
 245 250 255
 Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Asn His
 260 265 270
 Val Ile Ile Gly Gly Gln Ala Gly Ile Thr Gly His Ile Cys Ile Ala
 275 280 285
 Asp His Val Ile Met Met Ala Gln Thr Gly Val Thr Lys Ser Ile Thr
 290 295 300
 Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu Ile
 305 310 315 320
 His Arg Gln Val Ala Lys Val Arg Asn Leu Pro Arg Leu Glu Glu Arg
 325 330 335
 Ile Ala Ala Leu Glu Lys Leu Val Gln Lys Leu Glu Ala Leu Ser Glu
 340 345 350
 Gln His

<210> 577

<211> 421

<212> PRT

<213> C. Trachomatis D serovar

<400> 577

Met Thr Ala Ser Gly Gly Ala Gly Gly Leu Gly Ser Thr Gln Thr Val
 1 5 10 15
 Asp Val Ala Arg Ala Gln Ala Ala Ala Thr Gln Asp Ala Gln Glu
 20 25 30
 Val Ile Gly Ser Gln Glu Ala Ser Glu Ala Ser Met Leu Lys Gly Cys
 35 40 45
 Glu Asp Leu Ile Asn Pro Ala Ala Ala Thr Arg Ile Lys Lys Lys Gly
 50 55 60
 Glu Lys Phe Glu Ser Leu Glu Ala Arg Arg Lys Pro Thr Ala Asp Lys
 65 70 75 80
 Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Gly Asp Thr Pro Leu
 85 90 95
 Glu Asp Arg Phe Thr Glu Asp Leu Ser Glu Val Ser Gly Glu Asp Phe
 100 105 110
 Arg Gly Leu Lys Asn Ser Phe Asp Asp Ser Ser Pro Asp Glu Ile
 115 120 125
 Leu Asp Ala Leu Thr Ser Lys Phe Ser Asp Pro Thr Ile Lys Asp Leu
 130 135 140
 Ala Leu Asp Tyr Leu Ile Gln Thr Ala Pro Ser Asp Gly Lys Leu Lys
 145 150 155 160
 Ser Thr Leu Ile Gln Ala Lys His Gln Leu Met Ser Gln Asn Pro Gln
 165 170 175
 Ala Ile Val Gly Arg Asn Val Leu Leu Ala Ser Glu Thr Phe Ala
 180 185 190
 Ser Arg Ala Asn Thr Ser Pro Ser Ser Leu Arg Ser Leu Tyr Phe Gln
 195 200 205
 Val Thr Ser Ser Pro Ser Asn Cys Ala Asn Leu His Gln Met Leu Ala
 210 215 220
 Ser Tyr Leu Pro Ser Glu Lys Thr Ala Val Met Glu Phe Leu Val Asn
 225 230 235 240
 Gly Met Val Ala Asp Leu Lys Ser Glu Gly Pro Ser Ile Pro Pro Ala
 245 250 255
 Lys Leu Gln Val Tyr Met Thr Glu Leu Ser Asn Leu Gln Ala Leu His

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Ser Val Asn Ser Phe Phe Asp Arg Asn Ile Gly Asn Leu Glu Asn Ser
 260 275 280 285
 Leu Lys His Glu Gly His Ala Pro Ile Pro Ser Leu Thr Thr Gly Asn
 290 295 300
 Leu Thr Lys Thr Phe Leu Gln Leu Val Glu Asp Lys Phe Pro Ser Ser
 305 310 315 320
 Ser Lys Ala Gln Lys Ala Leu Asn Glu Leu Val Gly Pro Asp Thr Gly
 325 330 335
 Pro Gln Thr Glu Val Leu Asn Leu Phe Phe Arg Ala Leu Asn Gly Cys
 340 345 350
 Ser Pro Arg Ile Phe Ser Gly Ala Glu Lys Lys Gln Gln Leu Ala Ser
 355 360 365
 Val Ile Thr Asn Thr Leu Asp Ala Ile Asn Ala Asp Asn Glu Asp Tyr
 370 375 380
 Pro Lys Pro Gly Asp Phe Pro Arg Ser Ser Phe Ser Ser Thr Pro Pro
 385 390 395 400
 His Ala Pro Val Pro Gln Ser Glu Ile Pro Thr Ser Pro Thr Ser Thr
 405 410 415
 Gln Pro Pro Ser Pro
 420

<210> 578

<211> 231

<212> PRT

<213> C. Trachomatis D serovar

<400> 578

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 1 5 10 15
 Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30
 Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr

225

230

<210> 579

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 579

Met	Lys	Ile	Thr	Pro	Ile	Lys	Thr	Arg	Lys	Val	Phe	Ala	His	Asp	Ser
1				5					10					15	
Leu	Gln	Glu	Ile	Leu	Gln	Glu	Ala	Leu	Pro	Pro	Leu	Gln	Glu	Arg	Ser
			20					25					30		
Val	Val	Val	Val	Ser	Ser	Lys	Ile	Val	Ser	Leu	Cys	Glu	Gly	Ala	Val
		35					40					45			
Ala	Asp	Ala	Arg	Met	Cys	Lys	Ala	Glu	Leu	Ile	Lys	Lys	Glu	Ala	Asp
	50					55					60				
Ala	Tyr	Leu	Phe	Cys	Glu	Lys	Ser	Gly	Ile	Tyr	Leu	Thr	Lys	Lys	Glu
65					70					75					80
Gly	Ile	Leu	Ile	Pro	Ser	Ala	Gly	Ile	Asp	Glu	Ser	Asn	Thr	Asp	Gln
				85					90					95	
Pro	Phe	Val	Leu	Tyr	Pro	Lys	Asp	Ile	Leu	Gly	Ser	Cys	Asn	Arg	Ile
		100						105					110		
Gly	Glu	Trp	Leu	Arg	Asn	Tyr	Phe	Arg	Val	Lys	Glu	Leu	Gly	Val	Ile
		115					120					125			
Ile	Thr	Asp	Ser	His	Thr	Thr	Pro	Met	Arg	Arg	Gly	Val	Leu	Gly	Ile
	130					135					140				
Gly	Leu	Cys	Trp	Tyr	Gly	Phe	Ser	Pro	Leu	His	Asn	Tyr	Ile	Gly	Ser
145					150					155					160
Leu	Asp	Cys	Phe	Gly	Arg	Pro	Leu	Gln	Met	Thr	Gln	Ser	Asn	Leu	Val
				165					170					175	
Asp	Ala	Leu	Ala	Val	Ala	Ala	Val	Val	Cys	Met	Gly	Glu	Gly	Asn	Glu
		180						185					190		
Gln	Thr	Pro	Leu	Ala	Val	Ile	Glu	Gln	Ala	Pro	Asn	Met	Val	Tyr	His
		195					200					205			
Ser	His	Pro	Thr	Ser	Arg	Glu	Glu	Tyr	Cys	Ser	Leu	Arg	Ile	Asp	Glu
	210					215					220				
Thr	Glu	Asp	Leu	Tyr	Gly	Pro	Phe	Leu	Gln	Ala	Val	Thr	Trp	Ser	Gln
225					230					235					240
Glu	Lys	Lys													

<210> 580

<211> 383

<212> PRT

<213> C. Trachomatis D serovar

<400> 580

Met	Leu	Pro	His	Gln	Gln	Asn	Ser	Ser	Ser	Glu	Arg	Ala	Arg	His	His
1				5					10					15	
Glu	Ser	Arg	Ser	His	Arg	His	Ser	Ser	Ser	Ser	Arg	His	His	Val	Thr
			20					25					30		
Arg	Ser	Gln	Ser	Ser	Ala	Leu	Pro	Gln	Leu	Gln	Glu	Arg	Pro	Val	Pro
		35					40					45			
His	Pro	Leu	Ala	Glu	Arg	Glu	Leu	Ile	Ile	Phe	His	Ser	Val	His	Gln
	50					55					60				
Gln	Gln	Asn	Asn	Asn	Pro	Leu	Arg	Met	Ile	Cys	Asp	Thr	Ile	Arg	Gln
65					70					75					80

Ala Gln Arg Gly Ile Phe Met Arg Ile Tyr Thr Ile Ser Ser Asp Asp
 85 90 95
 Ile Ile Gln Ser Leu Ile Gln Thr Ser His His Val Pro Val Glu Val
 100 105 110
 Lys Tyr His Cys Gly Glu Ser Leu Pro Val Ala Cys Gln Asn Ser Arg
 115 120 125
 Val Val Leu Arg Leu Thr Asn Gly Arg Thr Leu Gln His Lys Lys Thr
 130 135 140
 Met Leu Ala Asp Phe Gln Thr Val Val Thr Gly Ser Ala Asn Tyr Thr
 145 150 155 160
 Asp Leu Ser Leu Asn His Asp Ala Asn Val Thr Ala Cys Ile Glu Ser
 165 170 175
 Ser Glu Leu His Asp Ala Val Phe Ser Glu Arg Pro Gln Leu Val His
 180 185 190
 Val Gly Pro Gln Leu Leu Asn Tyr Ile Pro Ile Gln Arg Leu Ile Pro
 195 200 205
 Asn Ala Ala Ser Lys Met Ile Leu Asn Ala Ile Asn Gln Ala Thr Asp
 210 215 220
 Ser Ile Phe Val Leu Met Tyr Ile Phe Leu Ser Pro Glu Phe Phe Leu
 225 230 235 240
 Ala Leu Ala Gln Ala Met Arg Arg Gly Val Arg Val Lys Val Ile Ile
 245 250 255
 Asp Asn His Ser Lys Gln Asp Thr Cys Lys Leu Leu Ser Lys Leu Gly
 260 265 270
 Ile Gln Leu Pro Ile Tyr Glu Arg Lys Thr Glu Gly Val Leu His Thr
 275 280 285
 Lys Ile Cys Cys Ile Asp Asn Lys Thr Leu Ile Phe Gly Ser Ala Asn
 290 295 300
 Trp Ser Gly Ala Gly Met Ile Lys Asn Phe Glu Asp Leu Phe Ile Leu
 305 310 315 320
 Arg Pro Ile Thr Glu Thr Gln Leu Gln Ala Phe Met Asp Val Trp Ser
 325 330 335
 Leu Leu Glu Thr Asn Ser Ser Tyr Leu Ser Pro Glu Ser Val Leu Thr
 340 345 350
 Ala Pro Thr Pro Ser Ser Arg Pro Thr Gln Gln Asp Thr Asp Ser Asp
 355 360 365
 Asp Glu Gln Pro Ser Thr Ser Gln Gln Asp Ile Arg Met Arg Lys
 370 375 380

<210> 581

<211> 193

<212> PRT

<213> C. Trachomatis D serovar

<400> 581

Met Trp Phe Phe Leu Gly Ser Pro Ser Ala Ile Thr Asn Phe Ser Arg
 1 5 10 15
 Val Asp Val Ala Leu Asn Leu Arg Ile Asn Arg Gln Ile Arg Ala Pro
 20 25 30
 Arg Val Arg Val Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ser
 35 40 45
 Ile Lys Glu Ala Leu Asp Leu Ala Lys Glu Ala Asn Leu Asp Leu Val
 50 55 60
 Glu Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr
 65 70 75 80
 Gly Lys Tyr Arg Tyr Asp Val Thr Lys Lys Glu Lys Asp Ser Lys Lys
 85 90 95

<212> PRT

<213> C. Trachomatis D serovar

<400> 583

Met 1	Phe	Thr	Arg	Ile	Val	Met	Val	Asp	Leu	Gln	Glu	Lys	Gln	Cys	Thr
Ile	Val	Lys	Arg	Asn	Gly	Met	Phe	Val	Pro	Phe	Asp	Arg	Asn	Arg	Ile
Phe	Gln	Ala	Leu	Glu	Ala	Ala	Phe	Arg	Asp	Thr	Arg	Arg	Ile	Asp	Asp
His	Met	Pro	Leu	Pro	Glu	Asp	Leu	Glu	Ser	Ser	Ile	Arg	Ser	Ile	Thr
His	Gln	Val	Val	Lys	Glu	Val	Val	Gln	Lys	Ile	Thr	Asp	Gly	Gln	Val
Val	Thr	Val	Glu	Arg	Ile	Gln	Asp	Met	Val	Glu	Ser	Gln	Leu	Tyr	Val
Asn	Gly	Leu	Gln	Asp	Val	Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Asp
Arg	Lys	Ala	His	Arg	Lys	Lys	Ser	Trp	Gln	Ser	Leu	Ser	Val	Val	Arg
Arg	Cys	Gly	Thr	Val	Val	His	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala
Leu	Glu	Lys	Ala	Phe	Arg	Ala	Thr	Asp	Lys	Thr	Glu	Gly	Met	Thr	Pro
Ser	Ser	Val	Arg	Glu	Glu	Ile	Asn	Ala	Leu	Thr	Gln	Asn	Ile	Val	Ala
Glu	Ile	Glu	Glu	Cys	Cys	Pro	Gln	Gln	Asp	Arg	Arg	Ile	Asp	Ile	Glu
Lys	Ile	Gln	Asp	Ile	Val	Glu	Gln	Gln	Leu	Met	Val	Val	Gly	His	Tyr
Ala	Val	Ala	Lys	Asn	Tyr	Ile	Leu	Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Val
Arg	Asp	Asn	Arg	Glu	Glu	Asp	Gly	Ser	Thr	Glu	Lys	Thr	Ile	Ala	Glu
Glu	Ala	Val	Glu	Val	Leu	Ser	Lys	Asp	Gly	Ser	Thr	Tyr	Thr	Met	Thr
His	Ser	Gln	Leu	Leu	Ala	His	Leu	Ala	Arg	Ala	Cys	Ser	Arg	Phe	Pro
Glu	Thr	Thr	Asp	Ala	Ala	Leu	Leu	Thr	Asp	Met	Ala	Phe	Ala	Asn	Phe
Tyr	Ser	Gly	Ile	Lys	Glu	Ser	Glu	Val	Val	Leu	Ala	Cys	Ile	Met	Ala
Ala	Arg	Ala	Asn	Ile	Glu	Lys	Glu	Pro	Asp	Tyr	Ala	Phe	Val	Ala	Ala
Glu	Leu	Leu	Leu	Asp	Val	Val	Tyr	Lys	Glu	Ala	Leu	Gly	Lys	Ser	Lys
Tyr	Ala	Glu	Asp	Leu	Glu	Gln	Ala	His	Arg	Asp	His	Phe	Lys	Arg	Tyr
Ile	Ala	Glu	Gly	Asp	Thr	Tyr	Arg	Leu	Asn	Ala	Glu	Leu	Lys	His	Leu
Phe	Asp	Leu	Asp	Ala	Leu	Ala	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu
Gln	Phe	Ser	Tyr	Met	Gly	Ile	Gln	Asn	Leu	Tyr	Asp	Arg	Tyr	Phe	Asn
His	His	Glu	Gly	Cys	Arg	Leu	Glu	Thr	Pro	Gln	Ile	Phe	Trp	Met	Arg

[illegible]

Val	Ala	Met	Gly	Leu	Ala	Leu	Asn	Glu	Gln	Asp	Lys	Thr	Ser	Trp	Ala
			420					425					430		
Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser	Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr
		435					440					445			
Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys
		450				455					460				
Tyr	Leu	Ser	Thr	Val	Gln	Asp	Asn	Leu	Val	Asn	Ile	Tyr	Lys	Val	Ile
465					470					475					480
Ala	Asp	Asn	Ala	Met	Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp
				485					490					495	
Trp	Thr	Ala	Ile	Arg	Ala	Thr	Gly	Ala	Leu	Ile	Lys	Gly	Thr	Asn	Gly
			500					505					510		
Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
		515					520					525			
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
		530				535					540				
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545					550					555					560
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
				565					570					575	
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
			580					585					590		
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
		595					600					605			
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
		610				615					620				
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
625					630					635					640
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
				645					650					655	
Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	Ala	Gln	Asp	His	Lys	Gly	Val	Val
			660					665					670		
Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Thr
		675					680					685			
Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Gln	His	Ile
	690					695					700				
Val	Gly	Asp	Gly	Leu	Asp	Glu	Glu	Lys	Leu	Ser	Glu	Thr	Ile	Ser	Ile
705					710					715					720
Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
				725					730					735	
Lys	Glu	Ala	Lys	Glu	Ala	Asn	Phe	Ala	His	Arg	Ala	Ile	Gly	Leu	Gly
			740					745					750		
Val	Met	Gly	Phe	Gln	Asp	Ala	Leu	Tyr	Lys	Leu	Asp	Ile	Ser	Tyr	Ala
		755					760					765			
Ser															

210	215	220
Arg Asp Glu Thr Ile His	Leu Asn Phe Gly Ile	Asp Leu Ile Asn Gly
225	230	235
Ile Lys Glu Glu Asn Pro	Glu Ile Trp Thr Pro	Glu Leu Gln Gln Glu
245	250	255
Ile Val Glu Leu Ile Lys	Arg Ala Val Asp Leu	Glu Ile Glu Tyr Ala
260	265	270
Gln Asp Cys Leu Pro Arg	Gly Ile Leu Gly Leu	Arg Ala Ser Met Phe
275	280	285
Ile Asp Tyr Val Gln His	Ile Ala Asp Arg Arg	Leu Glu Arg Ile Gly
290	295	300
Leu Lys Pro Ile Tyr His	Thr Lys Asn Pro Phe	Pro Trp Met Ser Glu
305	310	315
Thr Ile Asp Leu Asn Lys	Glu Lys Asn Phe Phe	Glu Thr Arg Val Ile
325	330	335
Glu Tyr Gln His Ala Ala	Ser Leu Thr Trp	
340	345	

<210> 585
 <211> 326
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 585
Met Ser Phe Phe His Thr Arg Lys Tyr Lys Leu Ile Leu Arg Gly Leu
1 5 10 15
Leu Cys Leu Ala Gly Cys Phe Leu Met Asn Ser Cys Ser Ser Ser Arg
20 25 30
Gly Asn Gln Pro Ala Asp Glu Ser Ile Tyr Val Leu Ser Met Asn Arg
35 40 45
Met Ile Cys Asp Cys Val Ser Arg Ile Thr Gly Asp Arg Val Lys Asn
50 55 60
Ile Val Leu Ile Asp Gly Ala Ile Asp Pro His Ser Tyr Glu Met Val
65 70 75 80
Lys Gly Asp Glu Asp Arg Met Ala Met Ser Gln Leu Ile Phe Cys Asn
85 90 95
Gly Leu Gly Leu Glu His Ser Ala Ser Leu Arg Lys His Leu Glu Gly
100 105 110
Asn Pro Lys Val Val Asp Leu Gly Gln Arg Leu Leu Asn Lys Asn Cys
115 120 125
Phe Asp Leu Leu Ser Glu Glu Gly Phe Pro Asp Pro His Ile Trp Thr
130 135 140
Asp Met Arg Val Trp Gly Ala Ala Val Lys Glu Met Ala Ala Ala Leu
145 150 155 160
Ile Gln Gln Phe Pro Gln Tyr Glu Glu Asp Phe Gln Lys Asn Ala Asp
165 170 175
Gln Ile Leu Ser Glu Met Glu Glu Leu Asp Arg Trp Ala Ala Arg Ser
180 185 190
Leu Ser Thr Ile Pro Glu Lys Asn Arg Tyr Leu Val Thr Gly His Asn
195 200 205
Ala Phe Ser Tyr Phe Thr Arg Arg Tyr Leu Ser Ser Asp Ala Glu Arg
210 215 220
Val Ser Gly Glu Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser
225 230 235 240
Pro Glu Ala Gln Ile Ser Ile Arg Asp Ile Met Arg Val Val Glu Tyr
245 250 255
Ile Ser Ala Asn Asp Val Glu Val Val Phe Leu Glu Asp Thr Leu Asn

260 265 270
 Gln Asp Ala Leu Arg Lys Ile Val Ser Cys Ser Lys Ser Gly Gln Lys
 275 280 285
 Ile Arg Leu Ala Lys Ser Pro Leu Tyr Ser Asp Asn Val Cys Asp Asn
 290 295 300
 Tyr Phe Ser Thr Phe Gln His Asn Val Arg Thr Ile Thr Glu Glu Leu
 305 310 315 320
 Gly Gly Thr Val Leu Glu
 325

<210> 586
 <211> 102
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 586
 Met Gln Asn Lys Arg Lys Val Arg Asp Asp Phe Ile Lys Ile Val Lys
 1 5 10 15
 Asp Val Lys Lys Asp Phe Pro Glu Leu Asp Leu Lys Ile Arg Val Asn
 20 25 30
 Lys Glu Lys Val Thr Phe Leu Asn Ser Pro Leu Glu Leu Tyr His Lys
 35 40 45
 Ser Val Ser Leu Ile Leu Gly Leu Leu Gln Gln Ile Glu Asn Ser Leu
 50 55 60
 Gly Leu Phe Pro Asp Ser Pro Val Leu Glu Lys Leu Glu Asp Asn Ser
 65 70 75 80
 Leu Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp
 85 90 95
 Met Phe Ser Lys Ala Glu
 100

<210> 587
 <211> 243
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 587
 Val Gly Cys Asn Leu Ala Gln Phe Leu Gly Lys Lys Val Leu Leu Ala
 1 5 10 15
 Asp Leu Asp Pro Gln Ser Asn Leu Ser Ser Gly Leu Gly Ala Ser Val
 20 25 30
 Arg Asn Asn Gln Lys Gly Leu His Asp Ile Val Tyr Lys Ser Asn Asp
 35 40 45
 Leu Lys Ser Ile Ile Cys Glu Thr Lys Lys Asp Ser Val Asp Leu Ile
 50 55 60
 Pro Ala Ser Phe Leu Ser Glu Gln Phe Arg Glu Leu Asp Ile His Arg
 65 70 75 80
 Gly Pro Ser Asn Asn Leu Lys Leu Phe Leu Asn Glu Tyr Cys Ala Pro
 85 90 95
 Phe Tyr Asp Ile Cys Ile Ile Asp Thr Pro Pro Ser Leu Gly Gly Leu
 100 105 110
 Thr Lys Glu Ala Phe Val Ala Gly Asp Lys Leu Ile Ala Cys Leu Thr
 115 120 125
 Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile Arg Glu Phe Leu
 130 135 140
 Ser Ser Val Gly Lys Pro Glu Glu Glu His Ile Leu Gly Ile Ala Leu
 145 150 155 160

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<210> 588
<211> 527
<212> PRT
<213> C. Trachomatis D serovar
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<400>	588															
Met	Pro	Ser	Leu	Ser	Gln	Ser	Arg	Arg	Ile	Ile	Gln	Gln	Ser	Ser	Ile	
1				5					10					15		
Arg	Lys	Ile	Trp	Asn	Gln	Ile	Asp	Thr	Ser	Pro	Lys	His	Gly	Val	Cys	
			20					25					30			
Val	Pro	Leu	Phe	Ser	Leu	Tyr	Thr	Gln	Glu	Ser	Cys	Gly	Ile	Gly	Glu	
		35					40					45				
Phe	Leu	Asp	Leu	Ile	Pro	Met	Ile	Asp	Trp	Cys	Ile	Ser	Cys	Gly	Phe	
	50					55					60					
Gln	Ile	Leu	Gln	Ile	Leu	Pro	Ile	Asn	Asp	Thr	Gly	Ser	Cys	Ser	Ser	
65					70					75					80	
Pro	Tyr	Asn	Ser	Ile	Ser	Ser	Ile	Ala	Leu	Asn	Pro	Leu	His	Leu	Ser	
				85					90					95		
Ile	Ser	Ala	Leu	Pro	Tyr	Lys	Glu	Glu	Val	Pro	Ala	Ala	Glu	Thr	Arg	
			100					105					110			
Ile	Arg	Glu	Met	Gln	Gln	Leu	Ser	Gln	Leu	Pro	Gln	Val	His	Tyr	Glu	
		115					120					125				
Lys	Val	Arg	Ser	Met	Lys	Arg	Asp	Phe	Phe	Gln	Glu	Tyr	Tyr	Arg	Val	
	130					135						140				
Cys	Lys	Gln	Lys	Lys	Leu	Thr	Asp	His	Pro	Asp	Phe	Tyr	Ala	Phe	Cys	
145					150					155					160	
Glu	Gln	Glu	Lys	Tyr	Trp	Leu	His	Pro	Tyr	Ala	Leu	Phe	Arg	Ser	Ile	
				165					170					175		
Arg	Glu	His	Leu	Asp	Asn	Leu	Pro	Ile	Asn	His	Trp	Pro	Thr	Thr	Tyr	
			180					185					190			
Thr	Asp	Leu	Ser	Gln	Ile	Thr	Glu	His	Glu	Arg	Thr	Phe	Ala	Glu	Asp	
		195					200					205				
Ile	Gln	Phe	His	Ser	Tyr	Leu	Gln	Tyr	Leu	Cys	Phe	Gln	Gln	Met	Thr	
	210					215					220					
Gln	Val	Arg	Glu	His	Ala	Asn	Cys	Lys	Ser	Cys	Leu	Ile	Lys	Gly	Asp	
225					230					235					240	
Ile	Pro	Ile	Leu	Ile	Ser	Lys	Asp	Ser	Cys	Asp	Val	Trp	Phe	Tyr	Arg	
				245					250					255		
His	Tyr	Phe	Ser	Ser	Ser	Glu	Ser	Val	Gly	Ala	Pro	Pro	Asp	Leu	Tyr	
			260					265					270			
Asn	Ala	Glu	Gly	Gln	Asn	Trp	His	Leu	Pro	Ile	Cys	Asn	Met	Lys	Thr	
		275					280					285				
Leu	Gln	Gln	Asp	Asn	Tyr	Leu	Trp	Trp	Lys	Glu	Arg	Leu	Arg	Tyr	Ala	
	290					295					300					


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<210> 589
<211> 146
<212> PRT
<213> C. Trachomatis D serovar
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<210> 590

<211> 650
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 590

Met	Thr	Ile	Pro	Ile	His	Glu	Asn	Lys	Tyr	Ser	Met	Ile	Ser	Phe	Thr
1				5					10					15	
Arg	Thr	Ile	Gly	Phe	Arg	Leu	Trp	Leu	Ile	Cys	Val	Ala	Ala	Ile	Met
			20					25					30		
Phe	Pro	Leu	Gly	Ile	Asn	Ile	Leu	Gln	Leu	Asn	Leu	Gln	Gln	Tyr	Lys
		35					40					45			
Lys	Thr	Leu	Ser	Ser	Ile	Thr	Ser	Asp	Leu	Arg	Glu	Asn	Ala	Leu	Phe
	50					55					60				
Lys	Ala	His	Thr	Leu	Gln	Gln	Thr	Ile	Pro	Leu	Asn	Ile	Asp	Ile	Leu
65					70					75					80
Ala	Leu	Phe	Ser	Glu	Ile	Phe	Asp	Leu	Asp	Arg	Gly	Val	Pro	Ala	Glu
				85					90					95	
Pro	Asp	Leu	Ala	Leu	Ser	Lys	Glu	Met	Glu	Lys	Ile	Phe	His	Ser	Thr
			100					105					110		
Tyr	Lys	Glu	Ile	Ser	Leu	Val	Lys	Lys	Glu	Ala	Asp	Gly	Asn	Phe	Arg
		115					120					125			
Val	Val	Ala	Ser	Ser	Arg	Ile	Glu	Gln	Leu	Gly	Lys	Asn	Tyr	Asn	Gln
		130				135					140				
Glu	Ile	Phe	Leu	Ser	Asp	Ser	Gln	Pro	Phe	Leu	Ala	Thr	Leu	Arg	His
145					150					155					160
Ser	Gly	Ser	Asp	Ser	Gln	Val	Leu	Ala	Val	Leu	Gln	Thr	Asn	Ile	Phe
				165					170					175	
Asp	Ile	Ser	Ser	Gln	Glu	Val	Leu	Gly	Val	Leu	Tyr	Thr	Leu	Ser	Asp
			180					185					190		
Thr	Asn	Tyr	Leu	Leu	Asn	Gly	Leu	Leu	Ala	Ala	Lys	Asp	Pro	Leu	Ser
		195					200					205			
Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Asn	Gly	Ile	Ile	Leu	Gln	Ala	Thr
	210					215					220				
Asp	Ser	Ser	Leu	Asp	Leu	Val	Ser	Ile	His	Lys	Thr	Val	Ser	Lys	Glu
225				230						235					240
Gln	Phe	Cys	Asp	Val	Phe	Leu	Arg	Asp	Asp	Ile	Cys	Pro	Pro	His	Leu
				245					250					255	
Leu	Leu	Arg	Pro	Pro	Leu	Asn	Leu	Asp	Pro	Leu	Pro	Tyr	Gly	Glu	Asn
			260					265					270		
Phe	Val	Ser	Phe	Cys	Ile	Gly	Asn	Thr	Glu	Met	Trp	Gly	Tyr	Ile	His
		275					280					285			
Ser	Leu	Pro	Glu	Met	Asp	Phe	Arg	Ile	Leu	Thr	Tyr	Glu	Glu	Lys	Ser
	290				295						300				
Ile	Ile	Phe	Ala	Ser	Leu	Trp	Arg	Arg	Thr	Leu	Tyr	Phe	Ala	Tyr	
305					310					315				320	
Phe	Cys	Cys	Val	Leu	Leu	Gly	Ser	Ile	Thr	Ala	Phe	Leu	Val	Ala	Lys
				325					330					335	
Arg	Leu	Ser	Lys	Pro	Ile	Arg	Lys	Leu	Ala	Thr	Ala	Met	Met	Glu	Thr
			340					345					350		
Arg	Arg	Asn	Gln	His	His	Pro	Tyr	Glu	Pro	Asp	Ser	Leu	Gly	Phe	Glu
		355					360					365			
Ile	Asn	His	Leu	Gly	Glu	Ile	Phe	Asn	Ser	Met	Val	Gln	Ser	Leu	Leu
	370					375					380				
Gln	Gln	Gln	Ser	Leu	Ala	Glu	Lys	Asn	Phe	Glu	Ile	Lys	Gln	His	Ala
385					390					395					400
Gln	Asn	Ala	Leu	Arg	Leu	Gly	Glu	Glu	Ala	Gln	Gln	Cys	Leu	Leu	Pro
				405					410					415	

Asn Gln Leu Pro Asp Ser Pro Thr Thr Glu Ile Ala Lys Ala Tyr Ile
 420 425 430
 Pro Ala Ile Thr Val Gly Gly Asp Phe Phe Asp Ile Phe Val Ile Gly
 435 440 445
 Glu Gly Pro Gln Ala Lys Leu Phe Leu Ile Val Ala Asp Ala Ser Gly
 450 455 460
 Lys Gly Val Asn Ala Cys Ala Tyr Ser Leu Phe Leu Lys Asn Met Leu
 465 470 475 480
 His Thr Phe Leu Ser Glu Leu Ser Ser Ile Gln Glu Ala Val Gln Gln
 485 490 495
 Thr Ala Ala Leu Phe Tyr Gln Gln Thr Ala Glu Ser Gly Met Phe Val
 500 505 510
 Thr Leu Cys Ile Tyr Cys Tyr His Tyr Ala Thr Arg Glu Leu Glu Tyr
 515 520 525
 Tyr Ser Cys Gly His Asn Pro Ala Cys Leu Arg Ala Pro Asn Gly Asp
 530 535 540
 Ile Ser Phe Leu Ser His Pro Gly Met Ala Leu Gly Phe Leu Pro Glu
 545 550 555 560
 Val Pro Pro His Pro Ala Tyr Thr Leu Val Leu Glu Glu Glu Ser Leu
 565 570 575
 Leu Val Leu Tyr Thr Asp Gly Val Thr Glu Ala Ser Asn Lys His Gly
 580 585 590
 Glu Met Phe Gly Glu Glu Arg Leu Lys Ala Leu Val Ala Ser Leu Thr
 595 600 605
 Lys Gln Ser Ala Glu Glu Ala Ile Gln Ser Ile Met Phe Ser Ile Lys
 610 615 620
 Ser Phe Val Lys Asp Cys Pro Gln His Asp Asp Ile Thr Leu Leu Val
 625 630 635 640
 Leu Lys Ile Pro Lys Glu Pro Ser Ala Tyr
 645 650

<210> 591

<211> 313

<212> PRT

<213> C. Trachomatis D serovar

<400> 591

Met Leu Ser Tyr Ile Lys Arg Arg Leu Leu Phe Asn Leu Leu Ser Leu
 1 5 10 15
 Trp Val Val Val Thr Leu Thr Phe Phe Ile Ile Lys Thr Ile Pro Gly
 20 25 30
 Asp Pro Phe Asn Asp Glu Asn Gly Asn Ile Leu Ser Ser Glu Thr Leu
 35 40 45
 Ala Leu Leu Lys Asn Arg Tyr Gly Leu Asp Lys Pro Leu Phe Thr Gln
 50 55 60
 Tyr Leu Ile Tyr Leu Lys Cys Leu Leu Thr Leu Asp Phe Gly Glu Ser
 65 70 75 80
 Leu Ile Tyr Lys Asp Arg Thr Val Ile Ser Ile Ile Ala Ala Ala Leu
 85 90 95
 Pro Ser Ser Ala Ile Leu Gly Leu Glu Ser Leu Cys Leu Ser Leu Phe
 100 105 110
 Gly Gly Ile Thr Leu Gly Ile Leu Ala Ala Phe Tyr Lys Lys Ser Cys
 115 120 125
 Gly Arg Thr Ile Phe Phe Ser Ser Val Ile Gln Ile Ser Val Pro Ala
 130 135 140
 Phe Val Ile Gly Ala Phe Leu Gln Tyr Val Phe Ala Ile Lys Tyr Ser
 145 150 155 160

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<210> 592
<211> 1237
<212> PRT
<213> C. Trachomatis D serovar
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<400>	592															
Met	Thr	Trp	Ile	Pro	Leu	His	Cys	His	Ser	Gln	Tyr	Ser	Ile	Leu	Asp	
1				5					10					15		
Ala	Thr	Cys	Ser	Ile	Lys	Lys	Phe	Val	Ala	Lys	Ala	Val	Glu	Tyr	Gln	
			20					25					30			
Ile	Pro	Ala	Leu	Ala	Leu	Thr	Asp	His	Gly	Asn	Leu	Phe	Gly	Ala	Val	
		35					40					45				
Glu	Phe	Tyr	Lys	Thr	Cys	Lys	Gln	Asn	Ala	Ile	Lys	Pro	Ile	Ile	Gly	
	50					55					60					
Cys	Glu	Leu	Tyr	Val	Ala	Pro	Ser	Ser	Arg	Phe	Asp	Lys	Lys	Lys	Glu	
65					70					75					80	
Arg	Lys	Ser	Arg	Val	Ala	Asn	His	Leu	Ile	Leu	Leu	Cys	Lys	Asp	Glu	
				85					90					95		
Glu	Gly	Tyr	Arg	Asn	Leu	Cys	Leu	Leu	Ser	Ser	Leu	Ala	Tyr	Thr	Glu	
			100					105					110			
Gly	Phe	Tyr	Tyr	Val	Pro	Arg	Ile	Asp	Arg	Asp	Leu	Leu	Ser	Gln	His	
		115					120					125				
Ser	Lys	Gly	Leu	Ile	Cys	Leu	Ser	Ala	Cys	Leu	Ser	Gly	Ser	Val	Ala	
	130				135					140						
Gln	Ala	Ala	Leu	Glu	Ser	Glu	Glu	Asp	Leu	Glu	Lys	Asp	Leu	Leu	Trp	
145					150					155				160		
Tyr	Gln	Asp	Leu	Phe	Gln	Glu	Asp	Phe	Phe	Ser	Glu	Val	Gln	Leu	His	
				165					170					175		
Lys	Ser	Ser	Glu	Glu	Lys	Val	Ala	Leu	Phe	Glu	Glu	Thr	Trp	Leu	Lys	
			180					185					190			
Gln	Asn	Tyr	Tyr	Gln	Phe	Ile	Glu	Lys	Gln	Leu	Lys	Val	Asn	Glu	Ala	
		195					200					205				
Val	Leu	Ala	Thr	Ser	Lys	Arg	Leu	Gly	Ile	Pro	Ser	Val	Ala	Thr	Asn	
	210					215				220						
Asp	Ile	His	Tyr	Leu	Asn	Pro	Asp	Asp	Trp	Leu	Ala	His	Glu	Ile	Leu	
225					230					235					240	

Leu	Asn	Val	Gln	Ser	Arg	Glu	Pro	Ile	Arg	Thr	Ala	Lys	Gln	Asn	Thr
				245					250					255	
Tyr	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Thr	Tyr	Pro	Ser	Arg	Glu	Phe	Tyr
			260					265					270		
Phe	Lys	Ser	Pro	Gln	Glu	Ile	Ala	Glu	Leu	Phe	Ala	Ala	His	Pro	Glu
		275					280				285				
Thr	Ile	Thr	Asn	Thr	Cys	Ile	Val	Ala	Glu	Arg	Cys	His	Leu	Glu	Leu
	290				295					300					
Asp	Phe	Glu	Thr	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	Ala	Leu	Gln
305				310						315					320
Lys	Lys	Gly	Ser	Tyr	Thr	Glu	Glu	Glu	Arg	Tyr	Lys	Ala	Ser	Ser	Ala
			325						330					335	
Phe	Leu	Glu	Glu	Leu	Cys	Glu	Gln	Gly	Leu	Thr	Ser	Lys	Tyr	Thr	Pro
			340					345					350		
Glu	Leu	Leu	Gly	His	Ile	Ala	Lys	Lys	Phe	Pro	Gly	Glu	Asp	Pro	Leu
		355					360					365			
Thr	Leu	Val	Lys	Glu	Arg	Leu	Lys	Leu	Glu	Ser	Ser	Ile	Ile	Ile	Ser
	370					375				380					
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	Asn	Trp
385				390						395					400
Ala	Lys	Asp	His	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
			405						410					415	
Gly	Ser	Val	Met	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile
			420					425					430		
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Ile	Ser
		435					440					445			
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ile	Gly	Arg	Glu	Arg	Val
	450					455					460				
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465					470					475					480
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Ile	Lys	Asp	Val	Gly
			485						490					495	
Arg	Thr	Leu	Asp	Thr	Pro	Leu	Ala	Lys	Val	Asn	Phe	Ile	Ala	Lys	His
			500					505					510		
Ile	Pro	Asp	Leu	Asn	Ala	Thr	Ile	Thr	Ser	Ala	Leu	Glu	Ala	Asp	Pro
		515					520					525			
Glu	Leu	Arg	Gln	Leu	Tyr	Val	Asp	Asp	Ala	Glu	Ala	Ala	Glu	Val	Ile
		530				535					540				
Asp	Met	Ala	Lys	Lys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545					550					555					560
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Pro	Leu	Thr	Asn	His	Ile	Pro
			565						570					575	
Ile	Cys	Val	Pro	Lys	Asp	Ser	Ser	Met	Ile	Ser	Thr	Gln	Tyr	Ser	Met
			580					585					590		
Lys	Pro	Val	Glu	Ser											

690		695		700
Glu Tyr Asp His Pro Leu Met Glu Pro Ile Leu Lys Glu Thr Phe Gly				
705		710		715
Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly Ser Leu Ala				
	725		730	735
Lys Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala Met Gly Lys				
	740		745	750
Lys Asp His Glu Gln Met Val Lys Glu Arg Glu Lys Phe Cys Ser Arg				
	755		760	765
Ala Ala Ala Asn Gly Ile Asp Pro Ser Ile Ala Thr Thr Ile Phe Asp				
	770		775	780
Lys Met Glu Lys Phe Ala Ser Tyr Gly Phe Asn Lys Ser His Ala Ala				
785		790		795
Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys Ala Asn Tyr				
	805		810	815
Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Tyr Asp Asp Ile				
	820		825	830
Glu Lys Val Gly Lys Leu Ile Gln Glu Ala His Ser Met Asn Ile Leu				
	835		840	845
Val Leu Pro Pro Asp Ile Asn Glu Ser Gly Gln Asp Phe Glu Ala Thr				
	850		855	860
Gln Lys Gly Ile Arg Phe Ser Leu Gly Ala Val Lys Gly Val Gly Met				
865		870		875
Ser Ile Val Asp Ser Ile Val Glu Glu Arg Glu Lys Asn Gly Pro Tyr				
	885		890	895
Lys Ser Leu Gln Asp Phe Val Gln Arg Ala Asp Phe Lys Lys Val Thr				
	900		905	910
Lys Lys Gln Leu Glu Asn Leu Val Asp Ala Gly Thr Phe Asp Cys Phe				
	915		920	925
Glu Pro Asn Lys Asp Leu Ala Leu Ala Ile Leu Asn Asp Leu Tyr Asp				
	930		935	940
Thr Phe Ser Arg Glu Lys Lys Glu Ala Ala Thr Gly Val Leu Thr Phe				
945		950		955
Phe Ser Leu Asp Ser Met Ala Arg Asp Pro Val Lys Ile Thr Val Ser				
	965		970	975
Pro Glu Asn Val Ile Gln Arg Ser Pro Lys Glu Leu Leu Lys Arg Glu				
	980		985	990
Lys Glu Leu Leu Gly Val Tyr Leu Thr Ala His Pro Met Asp Ala Val				
	995		1000	1005
Glu His Met Leu Pro Phe Leu Ser Val Val Pro Ala Arg Asp Phe Glu				
	1010		1015	1020
Gly Leu Pro His Gly Thr Ile Ile Arg Thr Val Phe Leu Ile Asp Lys				
1025		1030		1035
Val Thr Thr Lys Ile Ser Ser Ala Glu Gln Lys Lys Phe Ala Leu Leu				
	1045		1050	1055
Gln Val Ser Asp Glu Val Asp Ser Tyr Glu Leu Pro Ile Trp Ala Asp				
	1060		1065	1070
Met Tyr Ala Glu Tyr Arg Asp Leu Leu Glu Glu Asp Arg Leu Ile Tyr				
	1075		1080	1085
Ala Ile Leu Ala Ile Asp Arg Arg Ser Asp Ser Leu Arg Leu Ser Cys				
	1090		1095	1100
Arg Trp Met Arg Asp Leu Ser Thr Val Asn Asp Ser Val Ile Ala Glu				
1105		1110		1115
Cys Asp Glu Val Tyr Asp Arg Leu Lys Ser Gln Lys Val Tyr Ser Ser				
	1125		1130	1135
Thr Lys Lys Ser Thr Gly Ala Gln Ser Ser Ala Met Ile Lys Lys Val				
	1140		1145	1150

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<210> 593
<211> 563
<212> PRT
<213> C. Trachomatis D serovar
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<div><400></div>	593														
Met	Val	Tyr	Phe	Arg	Ala	His	Gln	Pro	Arg	His	Thr	Pro	Lys	Thr	Phe
1				5					10					15	
Pro	Leu	Glu	Val	His	His	Ser	Phe	Ser	Asp	Lys	His	Pro	Gln	Ile	Ala
			20					25					30		
Lys	Ala	Met	Arg	Ile	Thr	Gly	Ile	Ala	Leu	Ala	Ala	Leu	Ser	Leu	Leu
		35					40					45			
Ala	Val	Val	Ala	Cys	Val	Ile	Ala	Val	Ser	Ala	Gly	Gly	Ala	Ala	Ile
	50					55					60				
Pro	Leu	Ala	Val	Ile	Ser	Gly	Ile	Ala	Val	Met	Ser	Gly	Leu	Leu	Ser
65					70					75					80
Ala	Ala	Thr	Ile	Ile	Cys	Ser	Ala	Lys	Lys	Ala	Leu	Ala	Gln	Arg	Lys
				85					90					95	
Gln	Lys	Gln	Leu	Glu	Glu	Ser	Leu	Pro	Leu	Asp	Asn	Ala	Thr	Glu	His
			100					105					110		
Val	Ser	Tyr	Leu	Thr	Ser	Asp	Thr	Ser	Tyr	Phe	Asn	Gln	Trp	Glu	Ser
		115					120					125			
Leu	Gly	Ala	Leu	Asn	Lys	Gln	Leu	Ser	Gln	Ile	Asp	Leu	Thr	Ile	Gln
	130					135					140				
Ala	Pro	Glu	Lys	Lys	Leu	Leu	Lys	Glu	Val	Leu	Gly	Ser	Arg	Tyr	Asp
145					150					155					160
Ser	Ile	Asn	His	Ser	Ile	Glu	Glu	Ile	Ser	Asp	Arg	Phe	Thr	Lys	Met
				165					170					175	
Leu	Ser	Leu	Leu	Arg	Leu	Arg	Glu	His	Phe	Tyr	Arg	Gly	Glu	Glu	Arg
			180					185					190		
Tyr	Ala	Pro	Tyr	Leu	Ser	Pro	Pro	Leu	Leu	Asn	Lys	Asn	Arg	Leu	Leu
		195					200					205			
Thr	Gln	Ile	Thr	Ser	Asn	Met	Ile	Arg	Met	Leu	Pro	Lys	Ser	Gly	Gly
	210					215					220				
Val	Phe	Ser	Leu	Lys	Ala	Asn	Thr	Leu	Ser	His	Ala	Ser	Arg	Thr	Leu
225					230					235					240
Tyr	Thr	Val	Leu	Lys	Val	Ala	Leu	Ser	Leu	Gly	Val	Leu	Ala	Gly	Val
				245					250					255	
Ala	Ala	Leu	Ile	Ile	Phe	Leu	Pro	Pro	Ser	Leu	Pro	Phe	Ile	Ala	Val
			260					265					270		
Ile	Gly	Val	Ser	Ser	Leu	Ala	Leu	Gly	Met	Ala	Ser	Phe	Leu	Met	Ile
		275					280					285			
Arg	Gly	Ile	Lys	Tyr	Leu	Leu	Glu	His	Ser	Pro	Leu	Asn	Arg	Lys	Gln
	290					295					300				

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<210> 594
<211> 1751
<212> PRT
<213> C. Trachomatis D serovar
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Met	Lys	Trp	Leu	Ser	Ala	Thr	Ala	Val	Phe	Ala	Ala	Val	Leu	Pro	Ser
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Val	Ser	Gly	Phe	Cys	Phe	Pro	Glu	Pro	Lys	Glu	Leu	Asn	Phe	Ser	Arg
			20					25					30		
Val	Gly	Thr	Ser	Ser	Ser	Thr	Thr	Phe	Thr	Glu	Thr	Val	Gly	Glu	Ala
		35				40					45				
Gly	Ala	Glu	Tyr	Ile	Val	Ser	Gly	Asn	Ala	Ser	Phe	Thr	Lys	Phe	Thr
	50					55					60				
Asn	Ile	Pro	Thr	Thr	Asp	Thr	Thr	Thr	Pro	Thr	Asn	Ser	Asn	Ser	Ser
65					70					75				80	
Ser	Ser	Asn	Gly	Glu	Thr	Ala	Ser	Val	Ser	Glu	Asp	Ser	Asp	Ser	Thr
			85						90					95	
Thr	Thr	Thr	Pro	Asp	Pro	Lys	Gly	Gly	Gly	Ala	Phe	Tyr	Asn	Ala	His
			100					105					110		
Ser	Gly	Val	Leu	Ser	Phe	Met	Thr	Arg	Ser	Gly	Thr	Glu	Gly	Ser	Leu
		115					120					125			

Thr	Leu	Ser	Glu	Ile	Lys	Ile	Thr	Gly	Glu	Gly	Gly	Ala	Ile	Phe	Ser
Gln	Gly	Glu	Leu	Leu	Phe	Thr	Asp	Leu	Thr	Gly	Leu	Thr	Ile	Gln	Asn
130	145				150					155					160
Asn	Leu	Ser	Gln	Leu	Ser	Gly	Gly	Ala	Ile	Phe	Gly	Glu	Ser	Thr	Ile
				165					170					175	
Ser	Leu	Ser	Gly	Ile	Thr	Lys	Ala	Thr	Phe	Ser	Ser	Asn	Ser	Ala	Glu
				180				185						190	
Val	Pro	Ala	Pro	Val	Lys	Lys	Pro	Thr	Glu	Pro	Lys	Ala	Gln	Thr	Ala
		195					200					205			
Ser	Glu	Thr	Ser	Gly	Ser	Ser	Ser	Ser	Ser	Gly	Asn	Asp	Ser	Val	Ser
	210					215					220				
Ser	Pro	Ser	Ser	Ser	Arg	Ala	Glu	Pro	Ala	Ala	Ala	Asn	Leu	Gln	Ser
225					230					235					240
His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu
				245					250					255	
Thr	Ser	Thr	Pro	Ser	His	Lys	Pro	Gly	Ser	Gly	Gly	Ala	Ile	Tyr	Ala
			260					265					270		
Lys	Gly	Asp	Leu	Thr	Ile	Ala	Asp	Ser	Gln	Glu	Val	Leu	Phe	Ser	Ile
		275					280					285			
Asn	Lys	Ala	Thr	Lys	Asp	Gly	Gly	Ala	Ile	Phe	Ala	Glu	Lys	Asp	Val
	290					295					300				
Ser	Phe	Glu	Asn	Ile	Thr	Ser	Leu	Lys	Val	Gln	Thr	Asn	Gly	Ala	Glu
305				310						315					320
Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gly	Asp	Leu	Ser	Ile	Gln	Ser
				325					330					335	
Ser	Lys	Gln	Ser	Leu	Phe	Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly
			340					345					350		
Ala	Leu	Tyr	Val	Glu	Gly	Asp	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile
		355					360					365			
Arg	Ile	Lys	Tyr	Asn	Lys	Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr
	370					375					380				
Leu	Pro	Lys	Ala	Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser
385				390						395					400
Ser	Ser	Pro	Gln	Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asn	Ser	Gly
				405					410					415	
Asp	Ser	Ser	Ser	Gly	Ser	Asp	Ser	Asp	Thr	Ser	Glu	Thr	Val	Pro	Ala
			420					425					430		
Thr	Ala	Lys	Gly	Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr
		435					440					445			
Asn	Ile	Thr	Gly	Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val
	450					455					460				
Gly	Gly	Gly	Ala	Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His
465				470						475					480
Arg	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	

[illegible]

Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln
 1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325
 Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
 1395 1400 1405
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg
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 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met
 1425 1430 1435 1440
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg
 1445 1450 1455
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
 1460 1465 1470
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr
 1475 1480 1485
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe

1490 1495 1500
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile
 1505 1510 1515 1520
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
 1525 1530 1535
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln
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 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
 1555 1560 1565
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
 1570 1575 1580
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile
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 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr
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 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
 1620 1625 1630
 Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn
 1635 1640 1645
 Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys
 1650 1655 1660
 Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile
 1665 1670 1675 1680
 Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu
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 Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala
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 Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe Trp Thr Leu Tyr Gly
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 Cys Gly Ala Arg Met Ile Phe
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 <212> DNA
 <213> Chlamydia pneumoniae

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35 40 45

Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser Arg Lys Leu
50 55 60

Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro Met Asp Ala
65 70 75 80

Ser	Phe	Asp	Ser	Pro 85	Glu	Asp	Val	Pro	Glu 90	Asp	Ile	Ala	Glu	Asn 95	Lys
Arg	Tyr	Lys	Gly 100	Ile	Thr	Gly	Phe	Thr 105	Ile	Ser	Glu	Val	Ala 110	Glu	Gln
Val	Lys	Lys 115	Asp	Phe	Gly	His	Ile 120	Asp	Ile	Leu	Val	His 125	Ser	Leu	Ala
Asn	Ser 130	Pro	Glu	Ile	Ser	Lys 135	Ser	Leu	Leu	Glu	Thr 140	Ser	Arg	Lys	Gly
Tyr 145	Leu	Ala	Ala	Leu	Ser 150	Ala	Ser	Ser	Tyr	Ser 155	Phe	Val	Ser	Leu	Leu 160
Ser	His	Phe	Gly 165	Ser	Ile	Met	Asn	Arg	Gly 170	Gly	Ser	Thr	Ile	Ser 175	Leu
Thr	Tyr	Leu	Ala 180	Ser	Met	Arg	Ala	Val 185	Pro	Gly	Tyr	Gly	Gly 190	Gly	Met
Ser	Ser	Ala 195	Lys	Ala	Ala	Leu	Glu 200	Ser	Asp	Thr	Lys	Thr 205	Leu	Ala	Trp
Glu 210	Ala	Gly	Arg	Arg	Trp	Gly 215	Ile	Arg	Val	Asn	Thr 220	Ile	Ser	Ala	Gly
Pro 225	Leu	Ala	Ser	Arg	Ala 230	Gly	Lys	Ala	Ile	Gly 235	Phe	Ile	Glu	Arg	Met 240
Val	Asp	Tyr	Tyr	Gln 245	Glu	Trp	Ala	Pro	Ile 250	Pro	Glu	Ala	Met	Asn 255	Ala
Glu	Gln	Val	Gly 260	Ala	Val	Ala	Ala	Phe 265	Leu	Ala	Ser	Pro	Leu 270	Ala	Ser
Ala	Ile	Thr 275	Gly	Glu	Thr	Leu	Tyr 280	Val	Asp	His	Gly	Ala 285	Asn	Val	Met
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Asn	Ile	Glu	Cys 20	Leu	Thr	Glu	Asp	Val 25	Ala	Glu	Phe	Lys	Asp 30	Leu	Leu
Tyr	Thr	Ala 35	His	Arg	Ile	Thr	Ser 40	Ser	Glu	Glu	Glu	Ser 45	Asp	Asn	Glu

Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
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 Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
 65 70 75 80
 Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
 85 90 95
 Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
 100 105 110
 Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
 115 120 125
 Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
 130 135 140
 Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
 145 150 155 160
 Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
 165 170 175
 Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
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 Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
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 Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
 210 215 220
 Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
 225 230 235 240
 Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
 245 250 255
 Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
 260 265 270
 Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
 275 280 285
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
 340 345 350

Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
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 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430
 Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
 Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser
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 Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys
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 Lys Lys Gly Lys
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<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 599

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Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly

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Ala	Thr	Lys	Asp	Phe	Arg	Asp	Val	Glu	Arg	Ile	Ala	Glu	Gln	Leu	Ser
	50					55					60				
Ile	Pro	Tyr	Tyr	Thr	Val	Ser	Phe	Ser	Lys	Glu	Tyr	Lys	Glu	Arg	Val
65					70					75					80
Phe	Ser	Arg	Phe	Leu	Arg	Glu	Tyr	Ala	Asn	Gly	Tyr	Thr	Pro	Asn	Pro
				85					90					95	
Asp	Val	Leu	Cys	Asn	Arg	Glu	Ile	Lys	Phe	Asp	Leu	Leu	Gln	Lys	Lys
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Val	Arg	Glu	Leu	Lys	Gly	Asp	Phe	Leu	Ala	Thr	Gly	His	Tyr	Cys	Arg
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	130					135					140				
Asp	Gln	Ser	Tyr	Phe	Leu	Cys	Gly	Thr	Pro	Lys	Asp	Ala	Leu	Ser	Asn
145					150					155					160
Val	Leu	Phe	Pro	Leu	Gly	Gly	Met	Tyr	Lys	Thr	Glu	Val	Arg	Arg	Ile
				165					170					175	
Ala	Gln	Glu	Ala	Gly	Leu	Ala	Thr	Ala	Thr	Lys	Lys	Asp	Ser	Thr	Gly
			180					185					190		
Ile	Cys	Phe	Ile	Gly	Lys	Arg	Pro	Phe	Lys	Ser	Phe	Leu	Glu	Gln	Phe
		195					200					205			
Val	Ala	Asp	Ser	Pro	Gly	Asp	Ile	Ile	Asp	Phe	Asp	Thr	Gln	Gln	Val
	210					215					220				
Val	Gly	Arg	His	Glu	Gly	Ala	His	Tyr	Tyr	Thr	Ile	Gly	Gln	Arg	Arg
225					230					235					240
Gly	Leu	Asn	Ile	Gly	Gly	Met	Glu	Lys	Pro	Cys	Tyr	Val	Leu	Ser	Lys
				245					250					255	
Asn	Met	Glu	Lys	Asn	Ile	Val	Tyr	Ile	Val	Arg	Gly	Glu	Asp	His	Pro
			260					265					270		
Leu	Leu	Tyr	Arg	Gln	Glu	Leu	Leu	Ala	Lys	Glu	Leu	Asn	Trp	Phe	Val
		275					280					285			
Pro	Leu	Gln	Glu	Pro	Met	Ile	Cys	Ser	Ala	Lys	Val	Arg	Tyr	Arg	Ser
	290					295					300				
Pro	Asp	Glu	Lys	Cys	Ser	Val	Tyr	Pro	Leu	Glu	Asp	Gly	Thr	Val	Lys
305					310					315					320
Val	Ile	Phe	Asp	Val	Pro	Val	Lys	Ala	Val	Thr	Pro	Gly	Gln	Thr	Val

				325					330							335
Ala	Phe	Tyr	Gln	Gly	Asp	Ile	Cys	Leu	Gly	Gly	Gly	Val	Ile	Glu	Val	
			340					345					350			
Pro	Met	Ile	His	Gln	Leu											
		355														

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